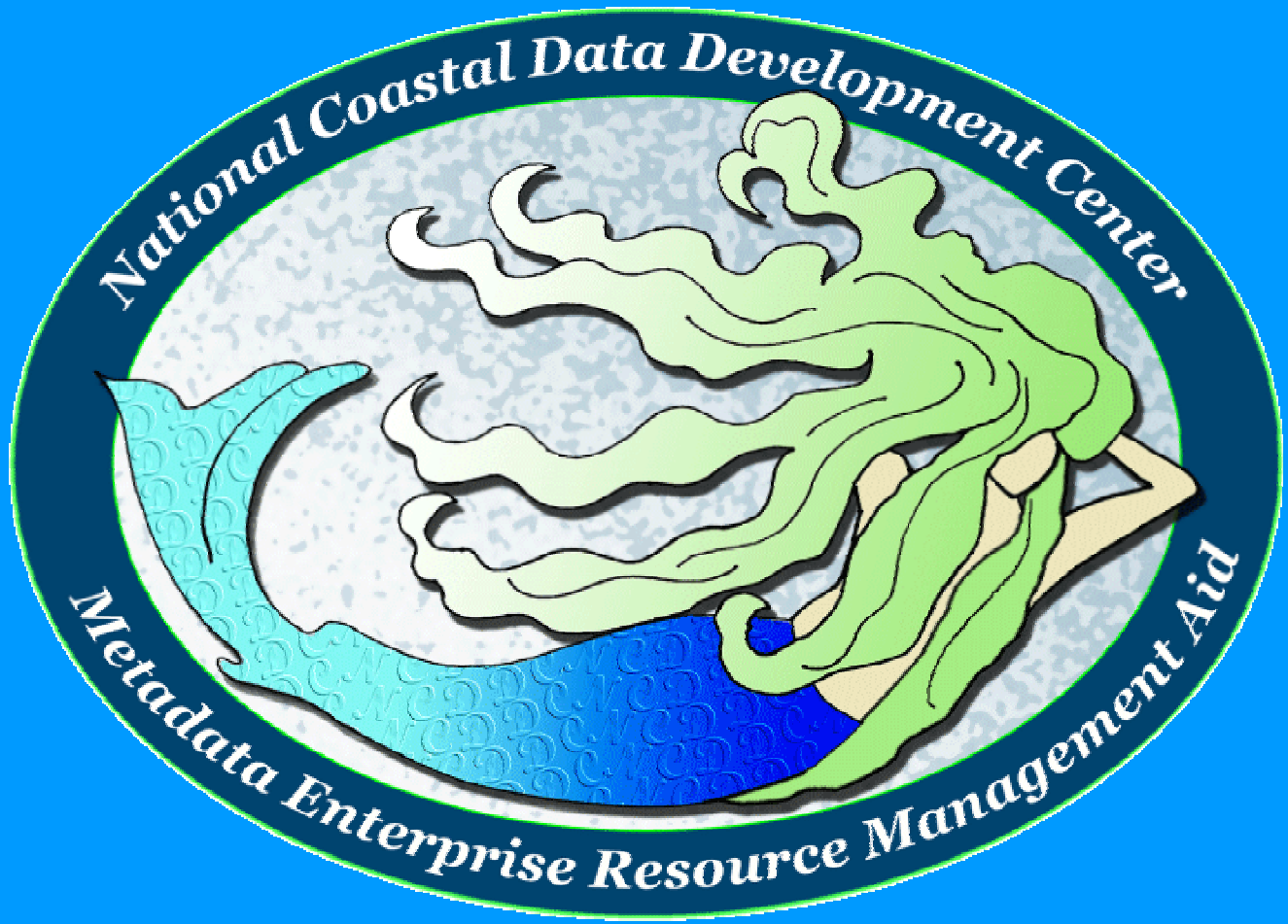
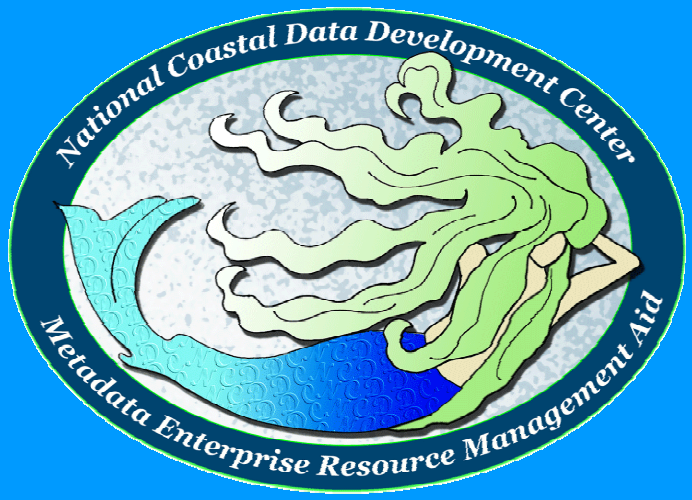
Getting Started with MERMAid



MERMAid Version 1.1
April 2004



NCDDC provides coastal data resources (organizations and individuals) with a tool to develop, validate, and manage Records via secure internet access. The Metadata Enterprise Resource Management Aid (MERMAid) allows users/data providers to establish unlimited Databases to organize their Records any way they see fit (e.g., by program, project, data type, personnel). Some of the key features in MERMAid include (1) user-defined roles with associated permissions; (2) change tracking; and (3) enhanced validation. Additionally, MERMAid ingests existing FGDC compliant metadata (in XML and text format).

This guide is specifically intended for the "Metadata Manager." Many details have been left out that are better covered in the User's Guide. The sole goal here is to present the essentials to get you started. The Manager role is for individuals that manage one or more Databases within a Data Source. A Data Source is part of an organizational hierarchy where the Manager may create a series of Databases in which to organize metadata Records. The Manager may also create additional user accounts for people to access their Data Source. Generally other people's work is overseen by the Manager. These additional users will be assigned a Custodian role, generally within a Database. This way, their account privileges will allow them access only to that Database and below. More than one Custodian account can exist within a Database to facilitate collaborative efforts during Record development.

The following screen shots were captured from an Internet Explorer 6.0 session. **For MERMAid to function correctly, you MUST have JavaScript, Active scripting and session cookies enabled.**

Getting Started with MERMAid

- Terms and Symbols
- Requesting an Account
- Initial Login to MERMAid
  - Install Security Certificate
- Secure Login to MERMAid
- MERMAid Environment
- Data Source Environment
- Creating a Database
- Database Environment
- Creating a Metadata Record
- Metadata Record Environment
- Navigating through MERMAid
- Entering and Validating Information
- Managing Compound Elements
- Special Cases
- Ingesting Files
- Storing Artifacts
- Creating Additional User Accounts
- Setting User Preferences
- Ending a MERMAid Session
  - Logout

Terms and Symbols

Data Source – Users are generally granted accounts at the Data Source level. The user (Manager) can then create Databases to hold their Records.

Database – A Database is designed to hold a limited number of Records (less than 100).

Enhanced Database – An Enhanced Database is designed to hold a large number of Records.

Record – An individual FGDC Metadata Record.

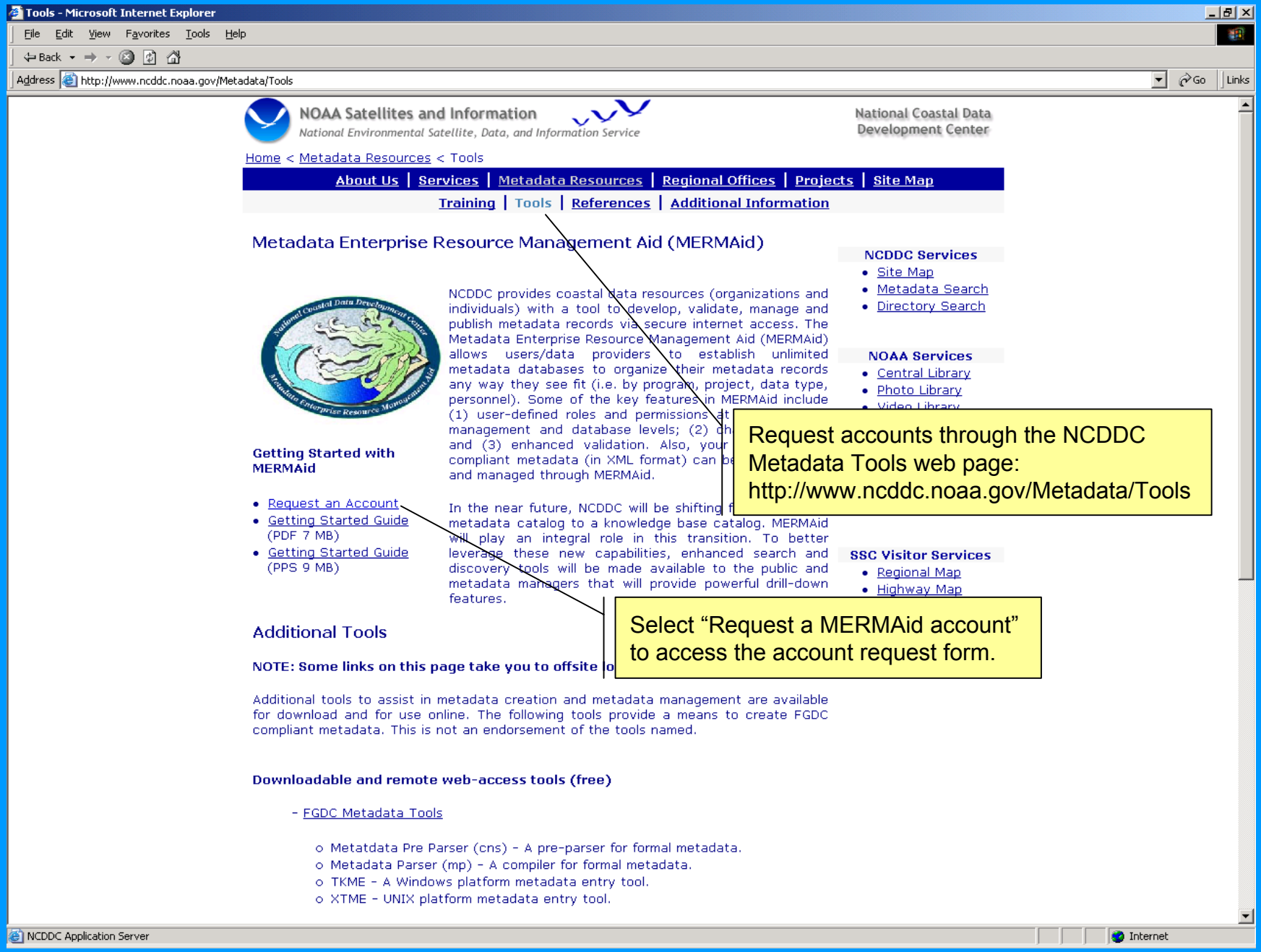
Compound Element – Within a Record, a compound element contains data elements and/or other compound elements.

Data Element – Within a Record, a data element is where information is entered.

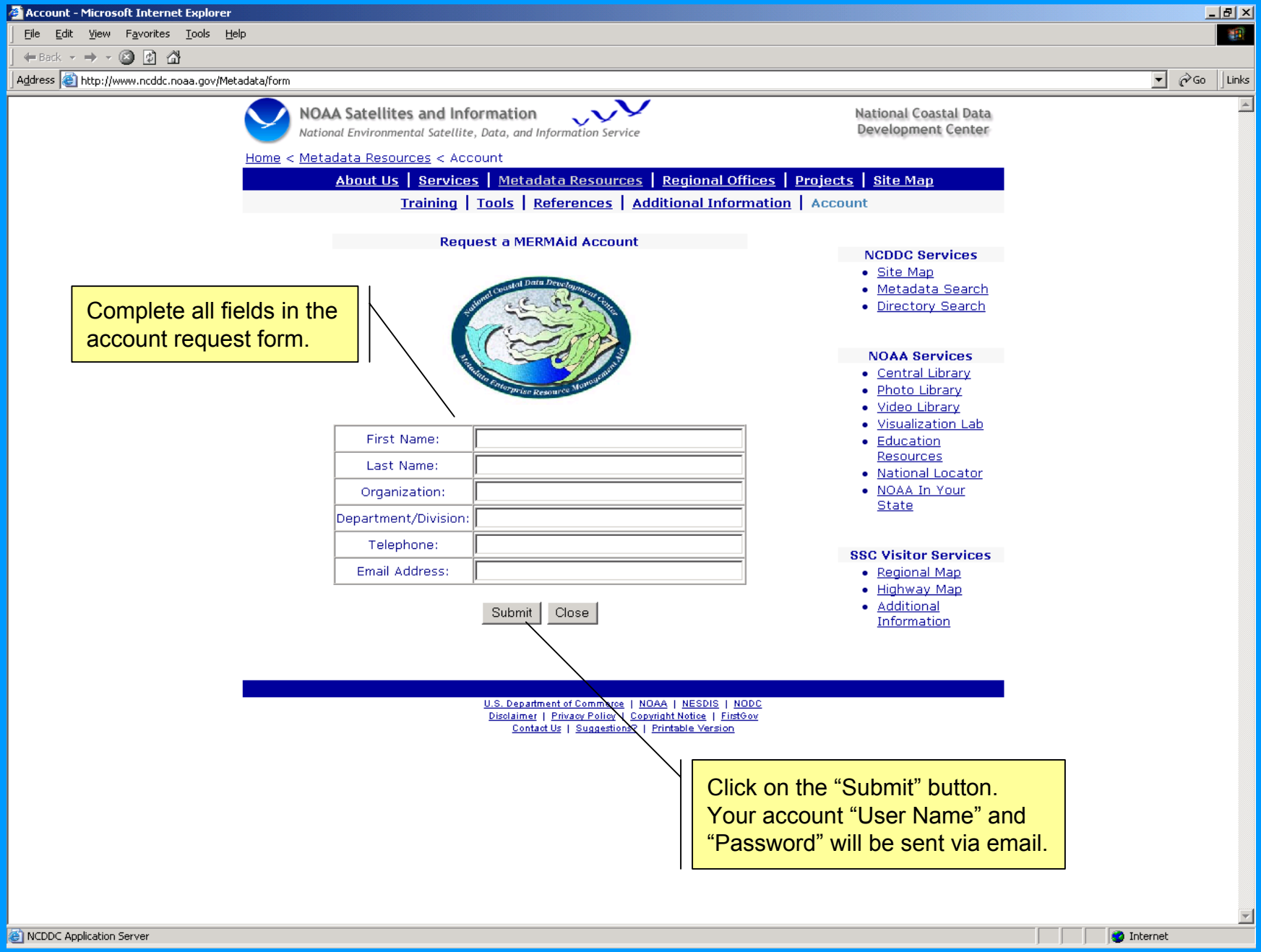
Validation Instructions – The red 'V' icon indicates invalid information in the Record. It links to the validation instructions for the particular element.

User Folder – Contains account information and access restrictions for users at the Data Source and Database levels.

Requesting an Account



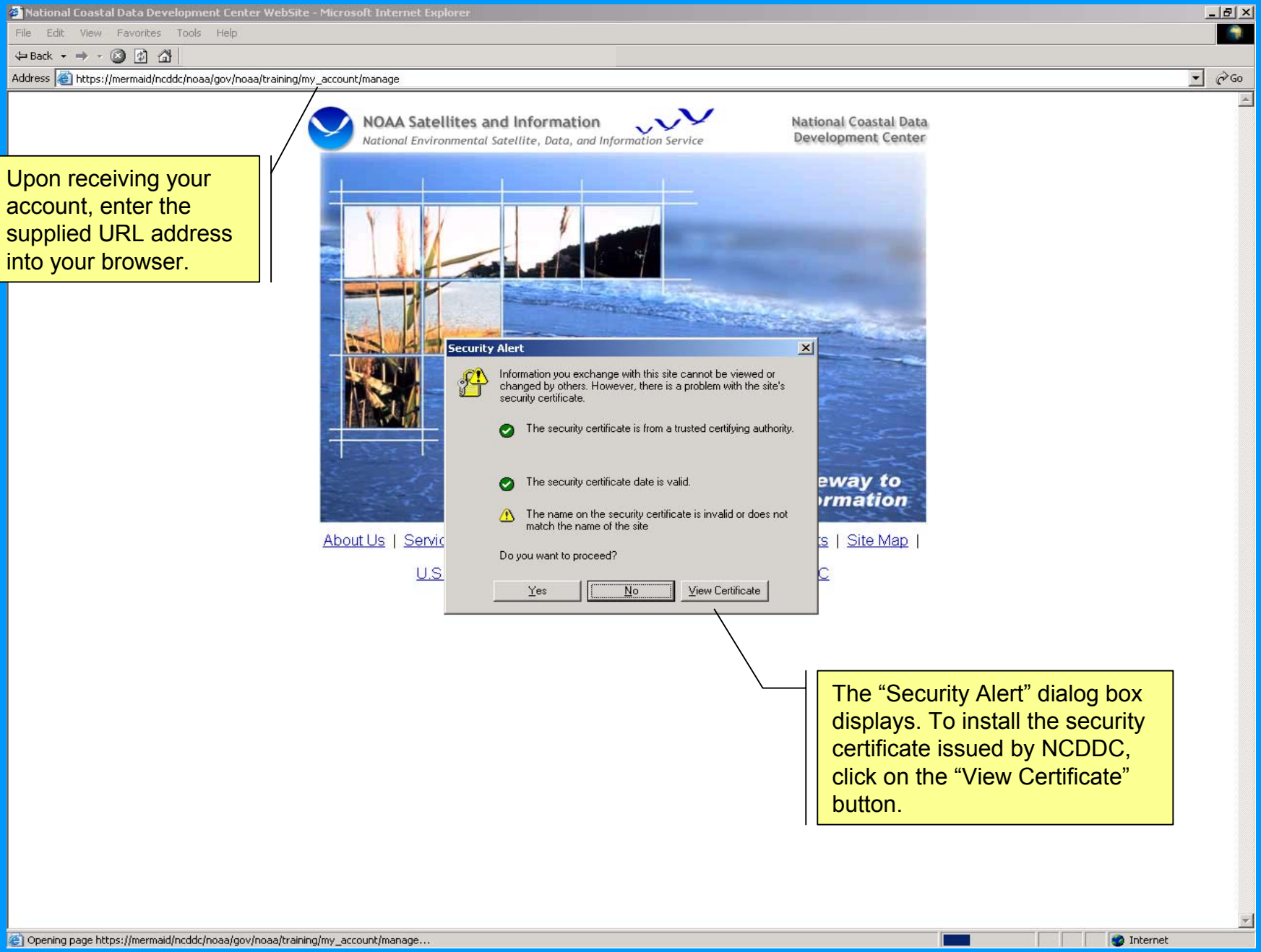
Requesting an Account



Complete all fields in the account request form.

Click on the “Submit” button. Your account “User Name” and “Password” will be sent via email.

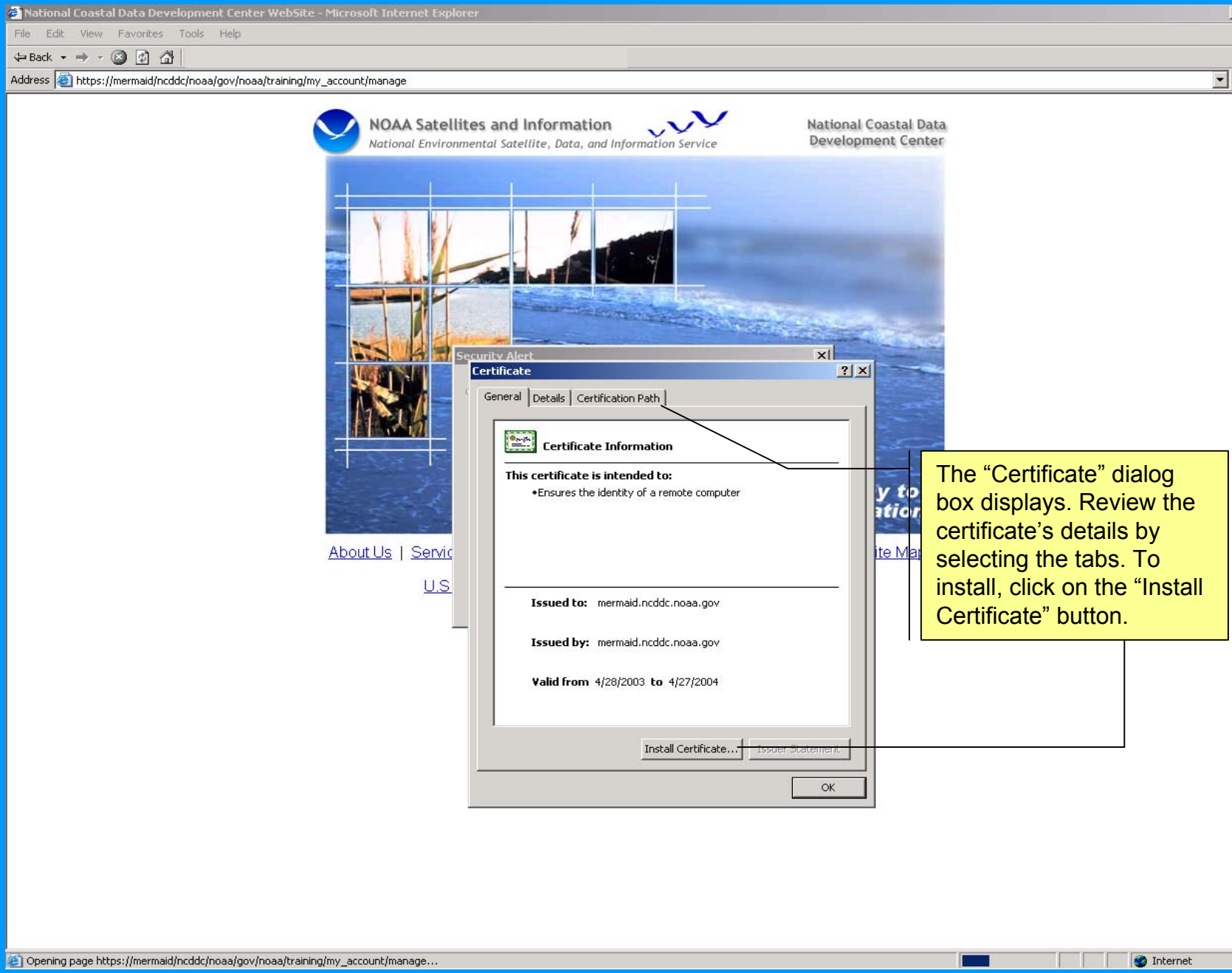
Initial Login to MERMAid



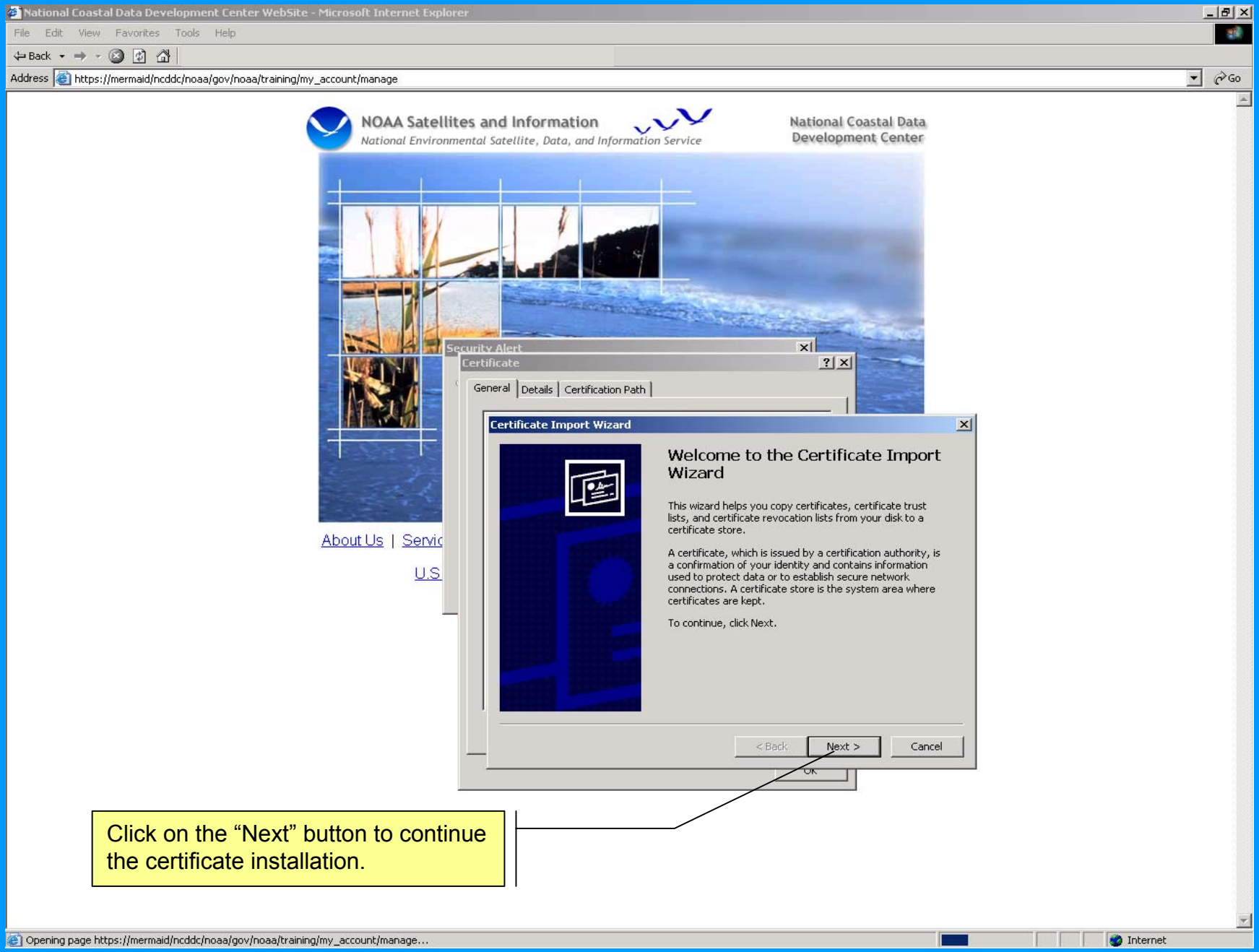
Upon receiving your account, enter the supplied URL address into your browser.

The “Security Alert” dialog box displays. To install the security certificate issued by NCDDC, click on the “View Certificate” button.

Initial Login - Install Security Certificate

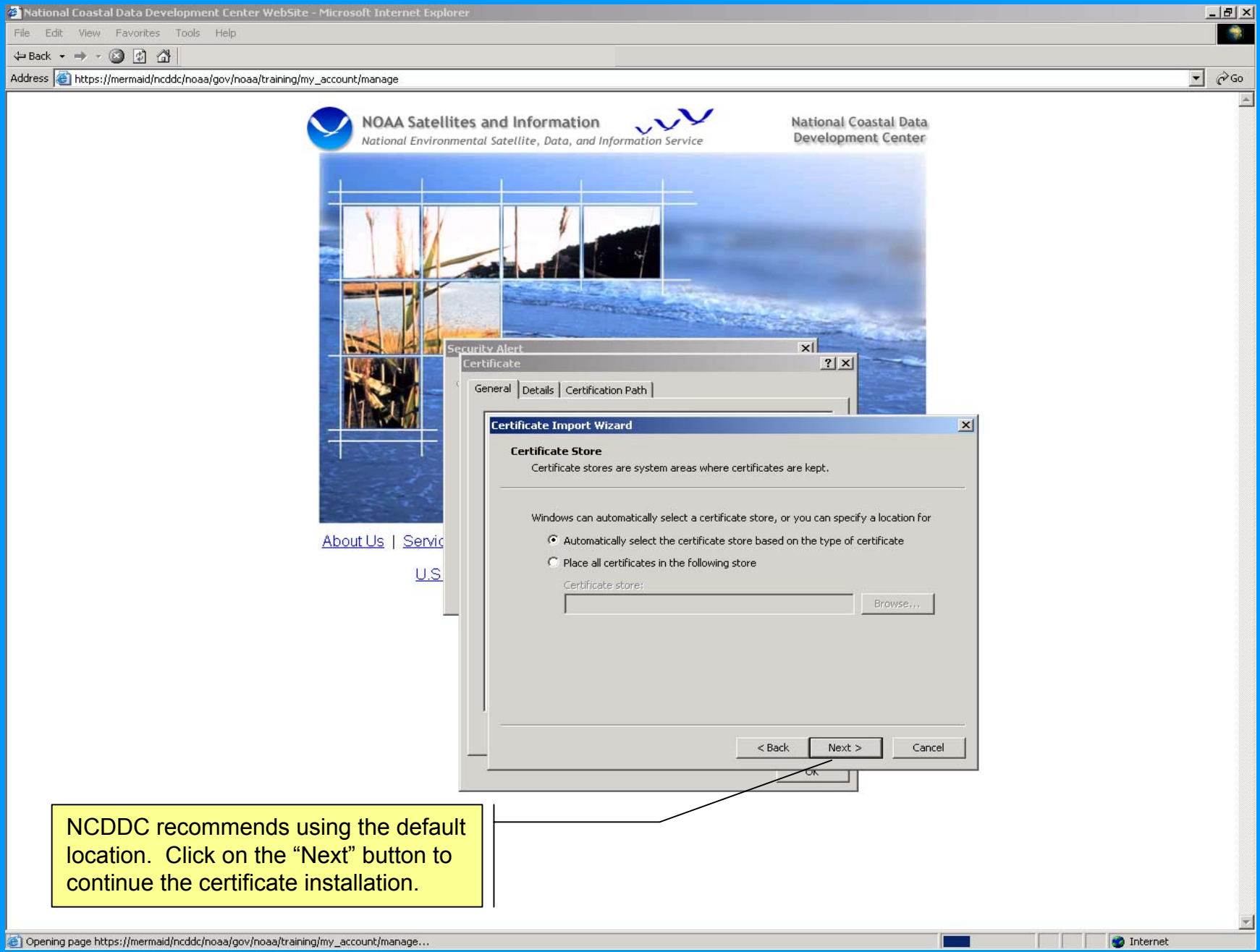


Initial Login - Install Security Certificate



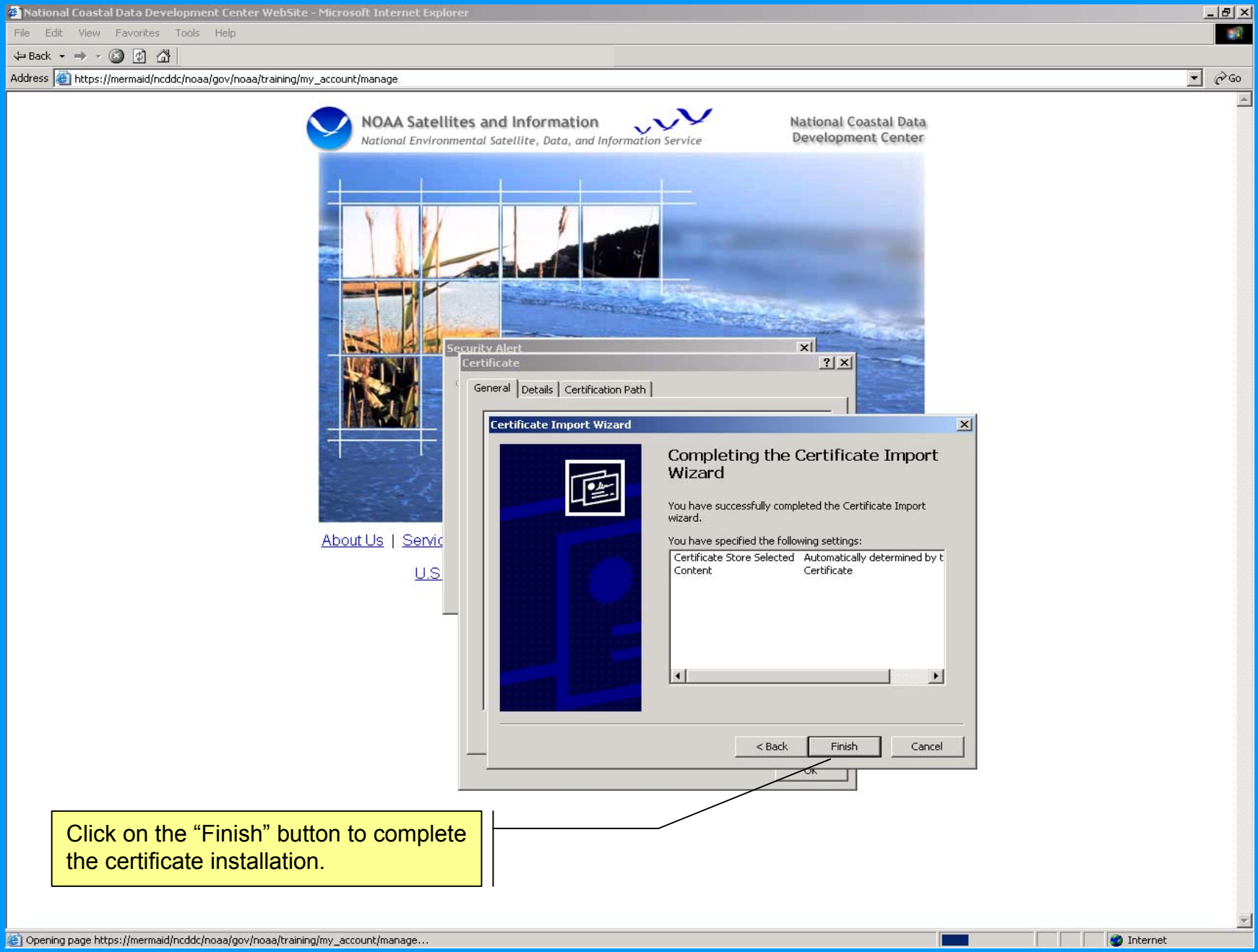
Click on the “Next” button to continue the certificate installation.

Initial Login - Install Security Certificate



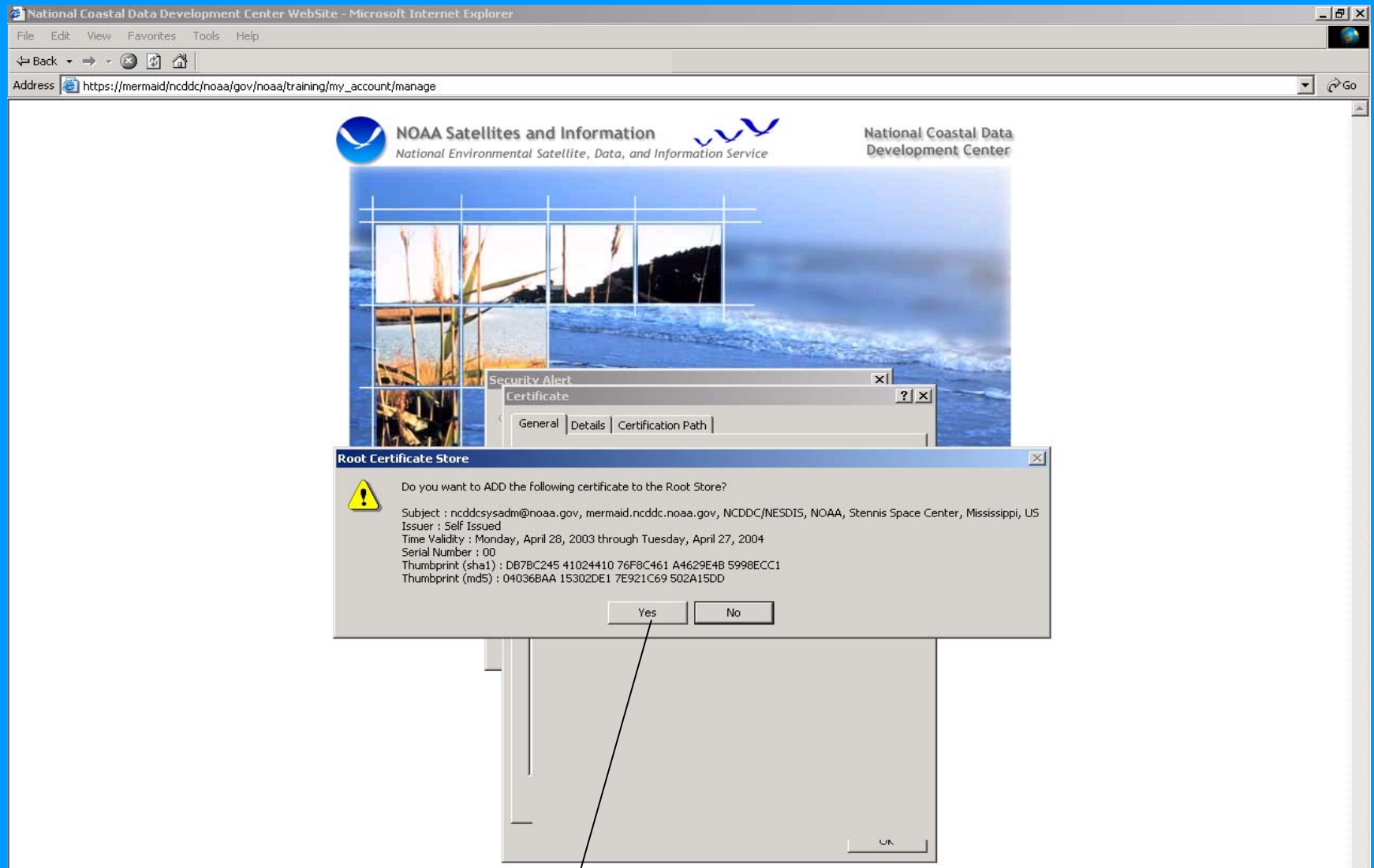
NCDDC recommends using the default location. Click on the “Next” button to continue the certificate installation.

Initial Login - Install Security Certificate



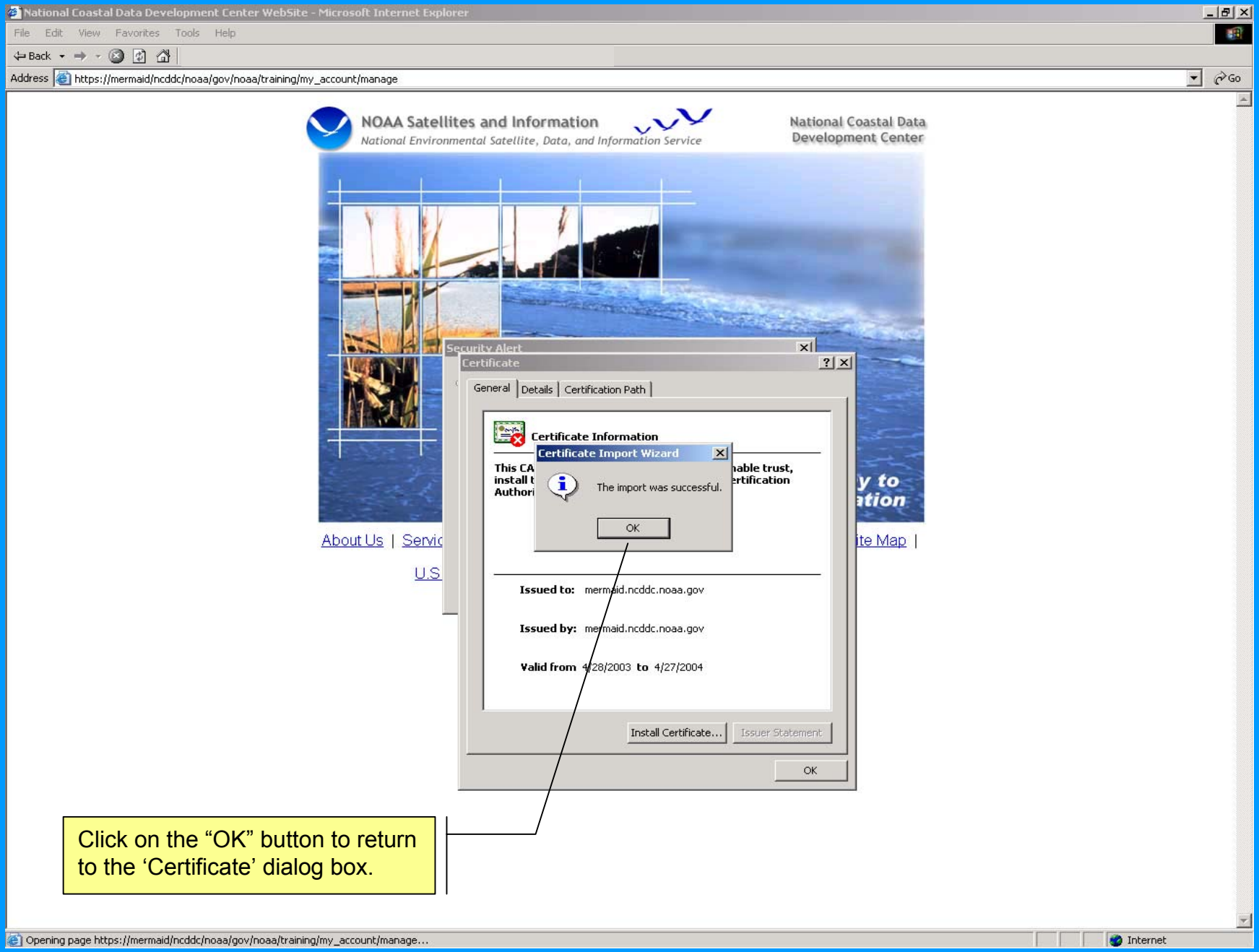
Click on the “Finish” button to complete the certificate installation.

Initial Login - Install Security Certificate



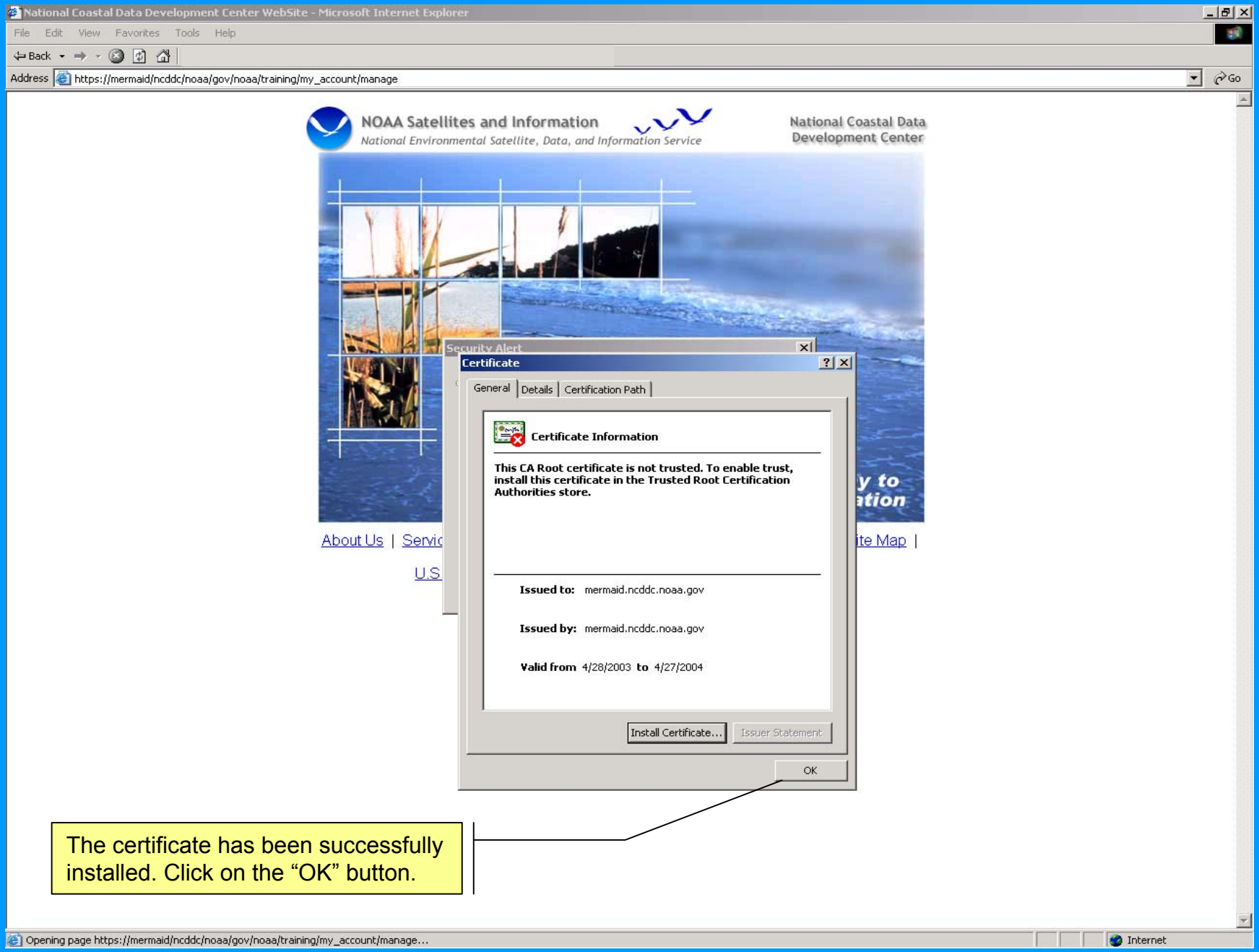
Click on the “Yes” button to add this certificate to your Root Store.

Initial Login - Install Security Certificate



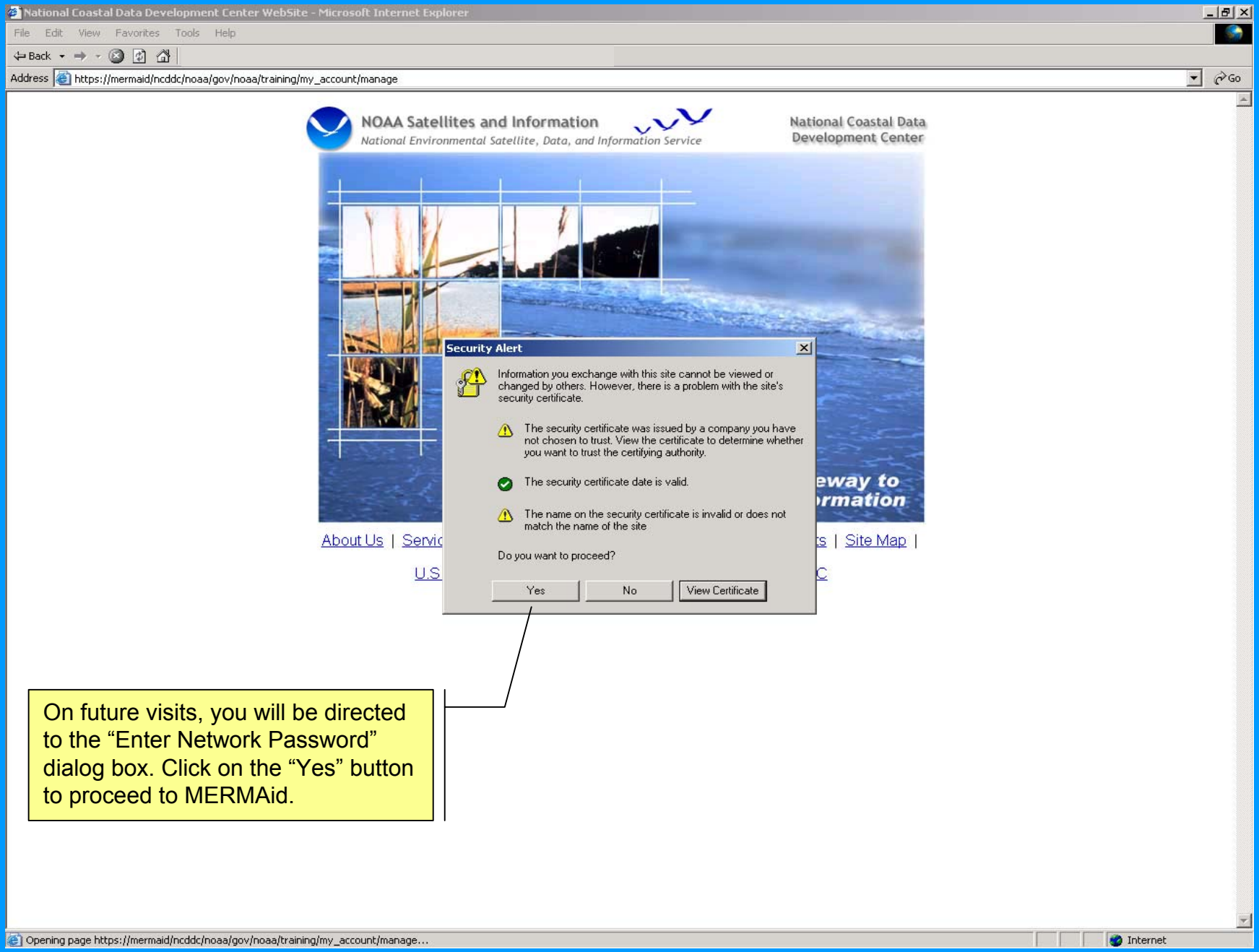
Click on the “OK” button to return to the ‘Certificate’ dialog box.

Initial Login - Install Security Certificate



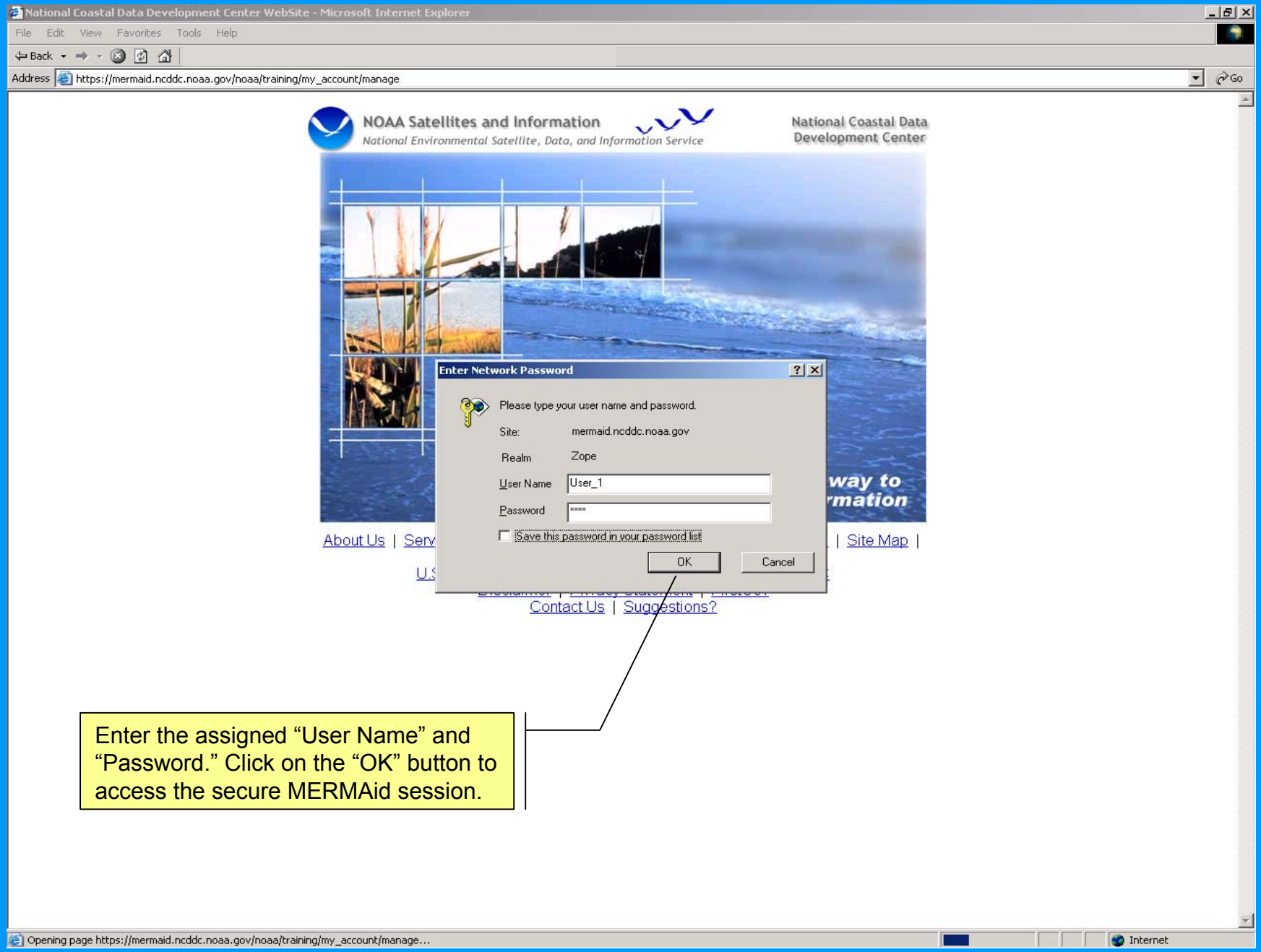
The certificate has been successfully installed. Click on the “OK” button.

Initial Login - Install Security Certificate



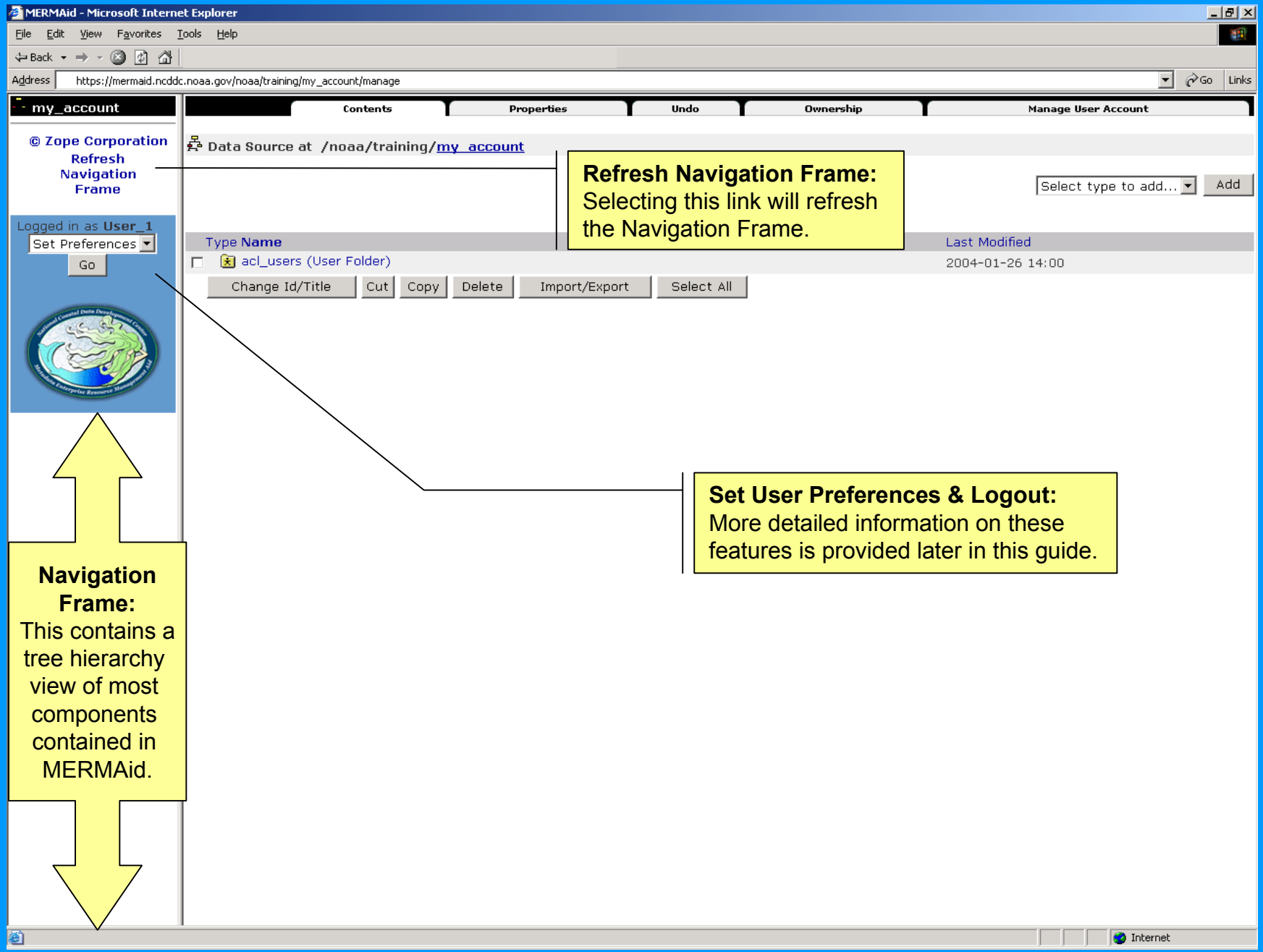
On future visits, you will be directed to the “Enter Network Password” dialog box. Click on the “Yes” button to proceed to MERMAid.

Secure Login to MERMAid

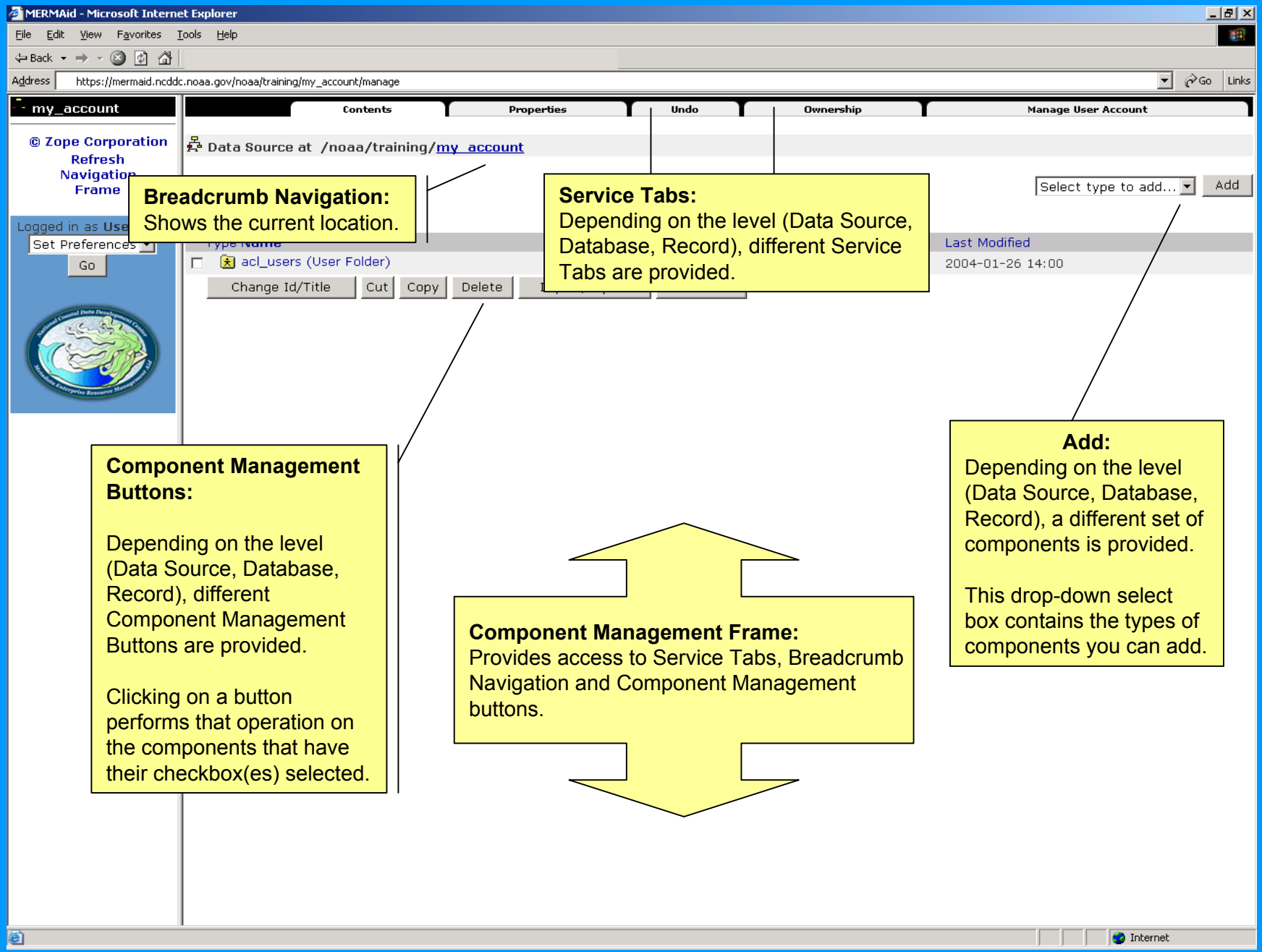


Enter the assigned “User Name” and “Password.” Click on the “OK” button to access the secure MERMAid session.

MERMAid Environment – Navigation Frame



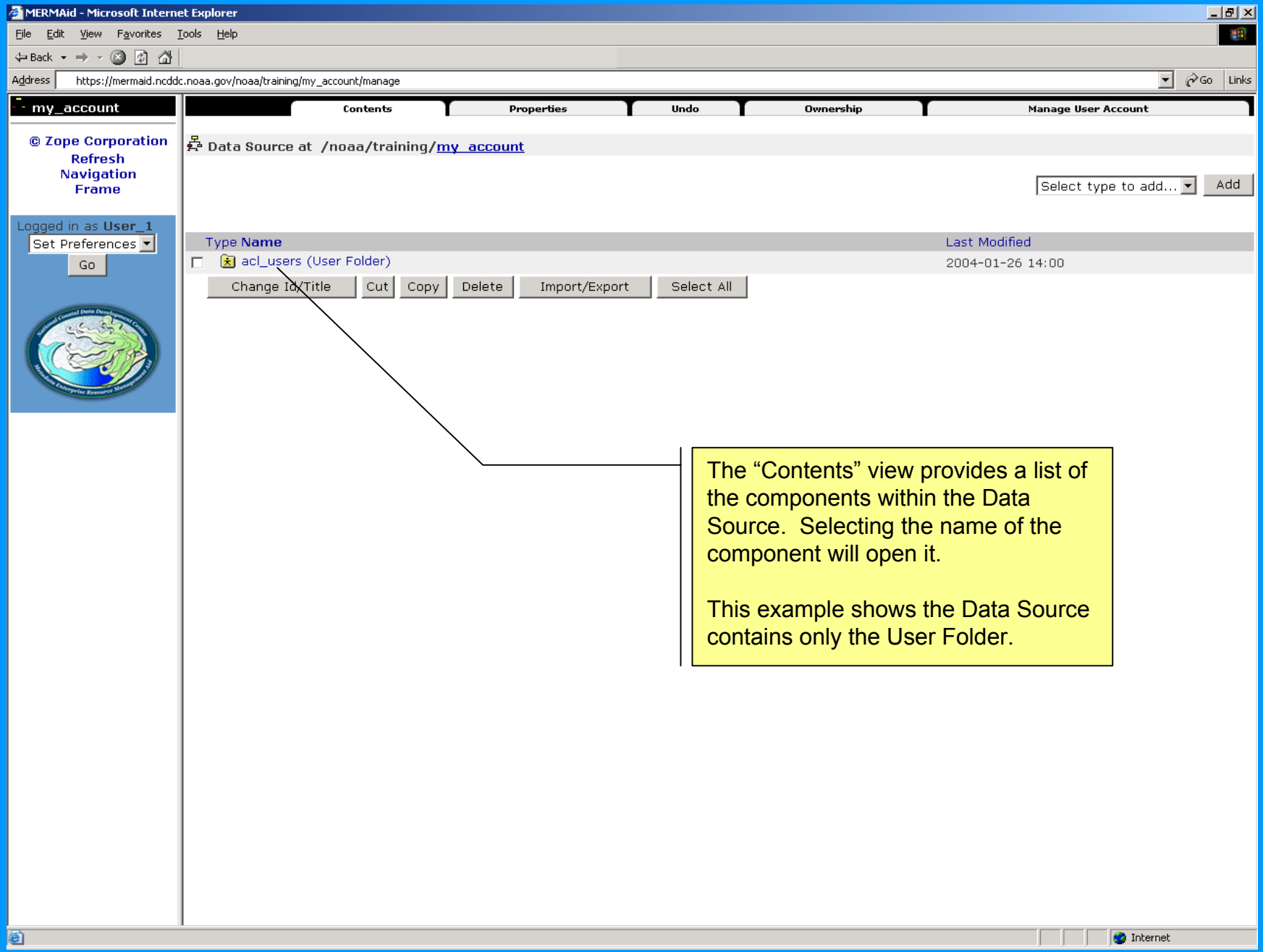
MERMAid Environment – Component Management Frame



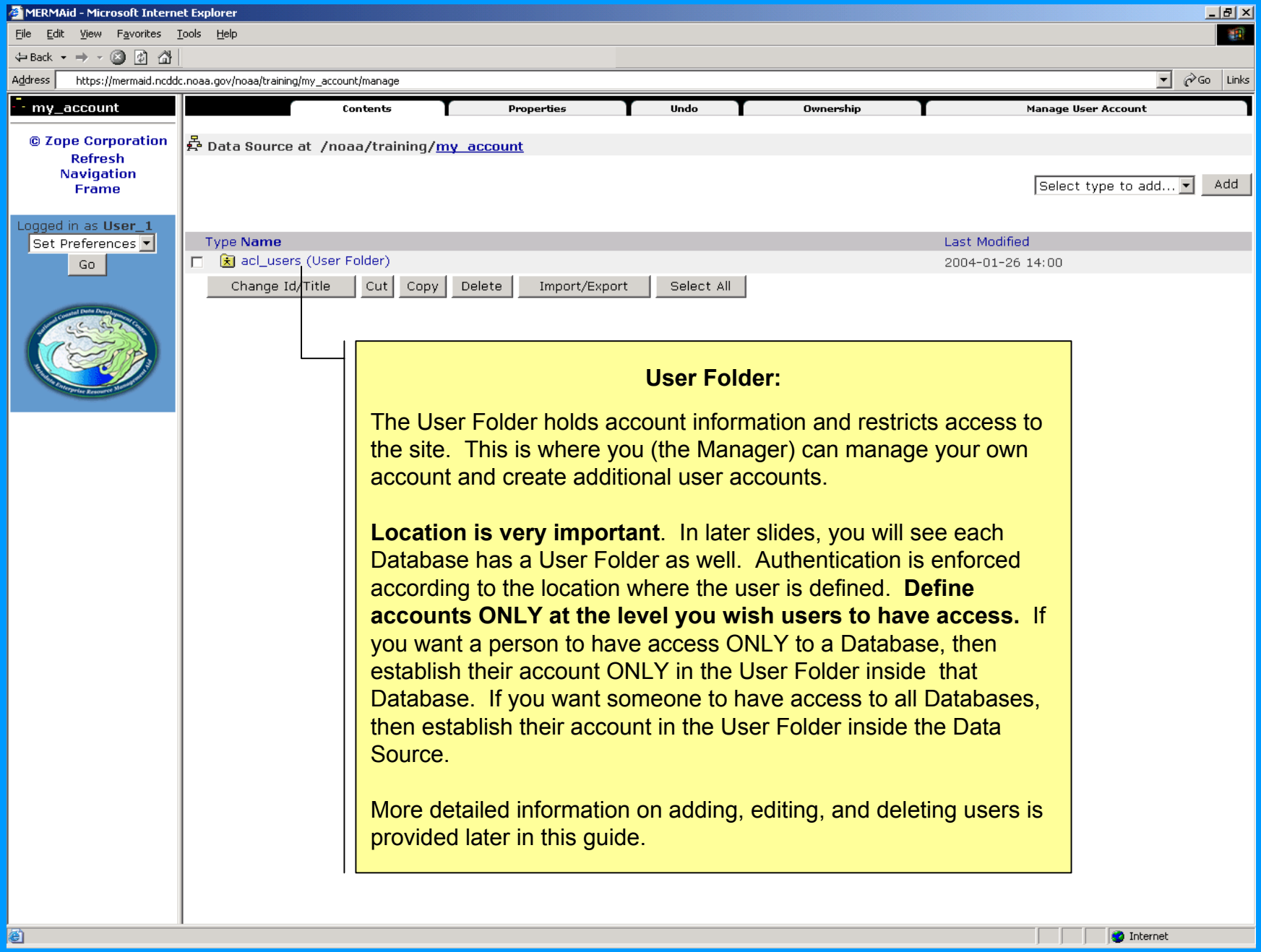
Data Source Environment

Generally, the Data Source is the level at which the Metadata Manager's account is established. From the Data Source level, the Manager can create and manage Databases and user accounts.

Data Source – “Contents” View



Data Source - User Folder



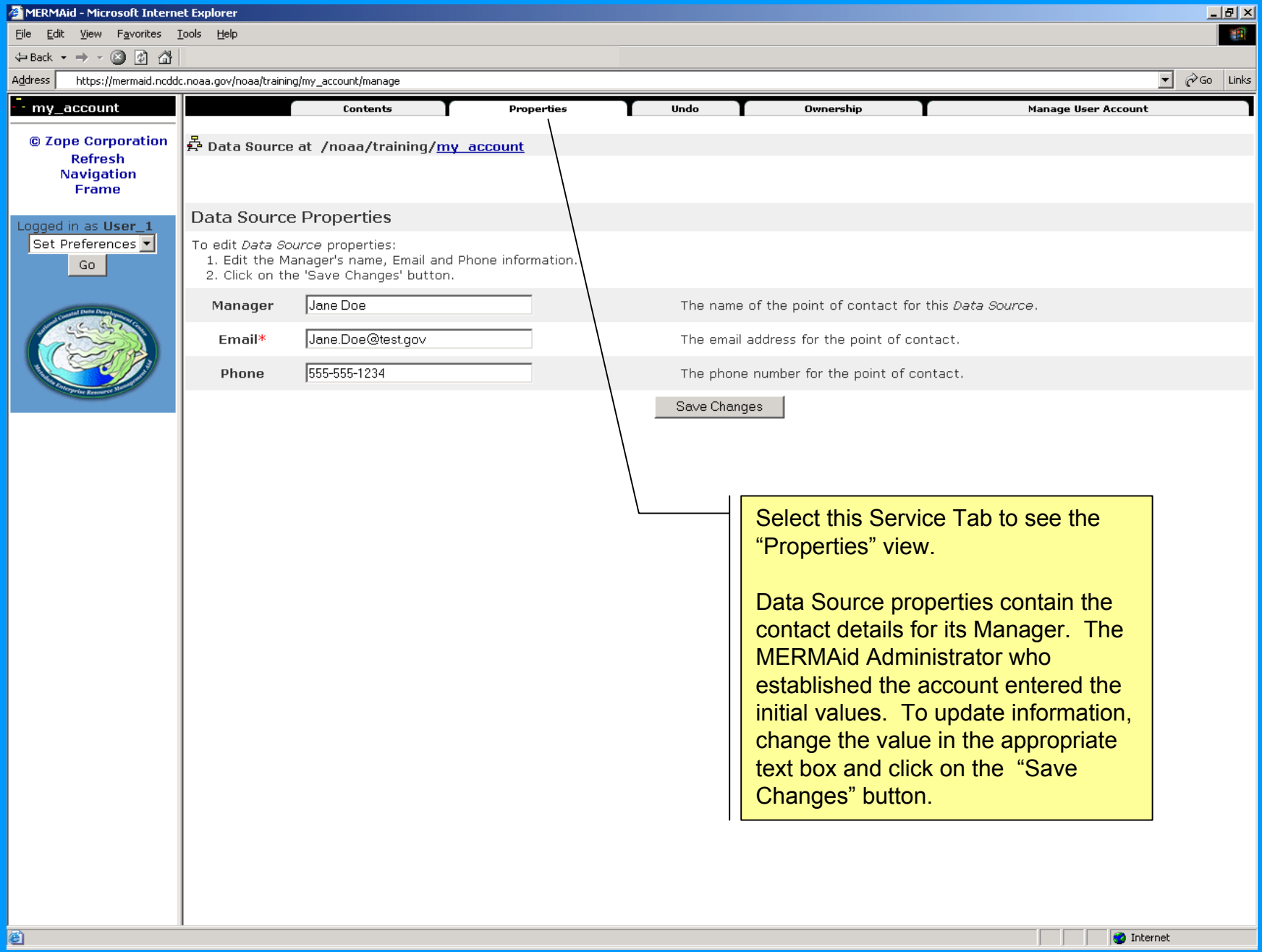
User Folder:

The User Folder holds account information and restricts access to the site. This is where you (the Manager) can manage your own account and create additional user accounts.

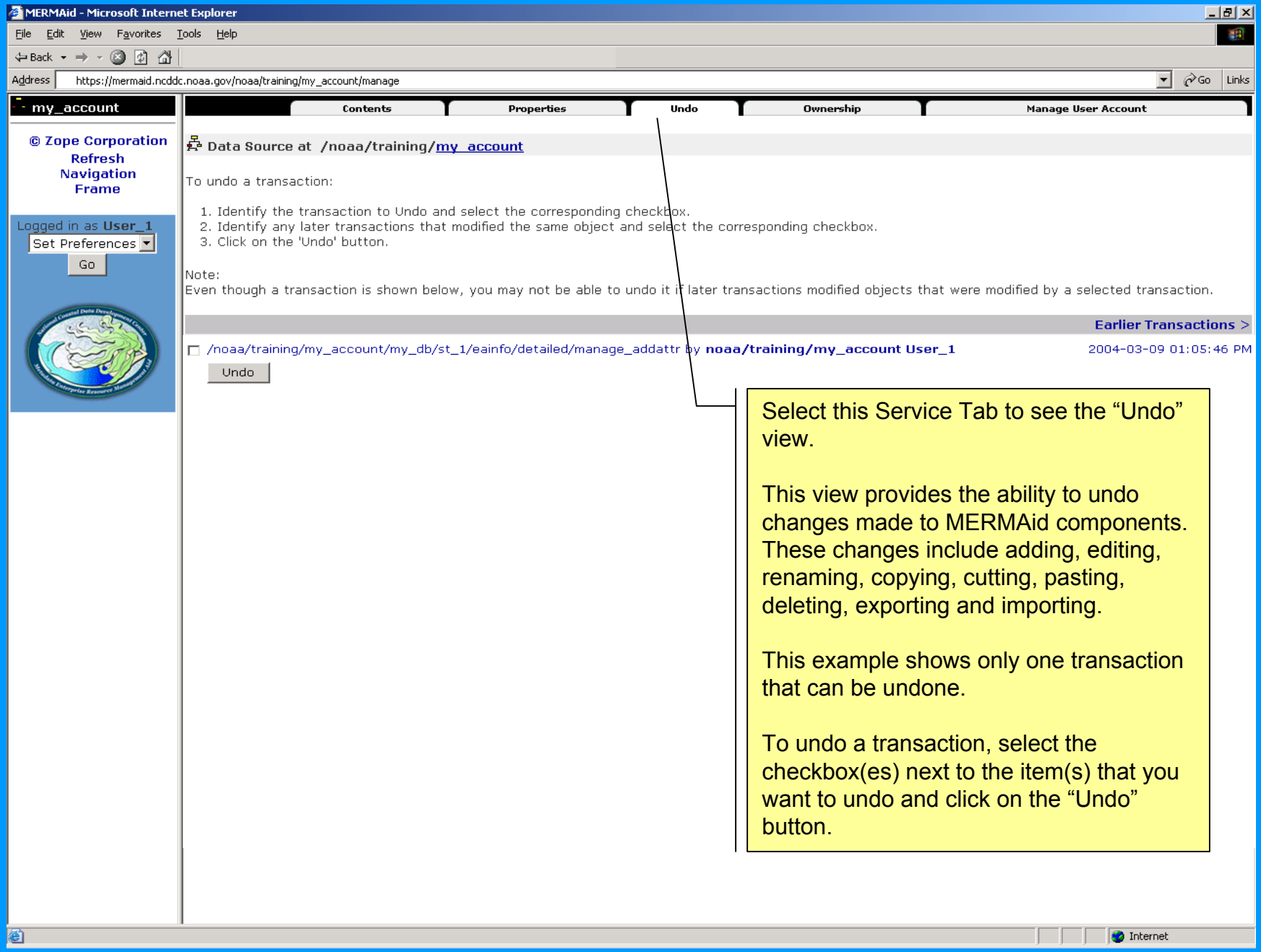
Location is very important. In later slides, you will see each Database has a User Folder as well. Authentication is enforced according to the location where the user is defined. **Define accounts ONLY at the level you wish users to have access.** If you want a person to have access ONLY to a Database, then establish their account ONLY in the User Folder inside that Database. If you want someone to have access to all Databases, then establish their account in the User Folder inside the Data Source.

More detailed information on adding, editing, and deleting users is provided later in this guide.

Data Source – “Properties” View



Data Source – “Undo” View



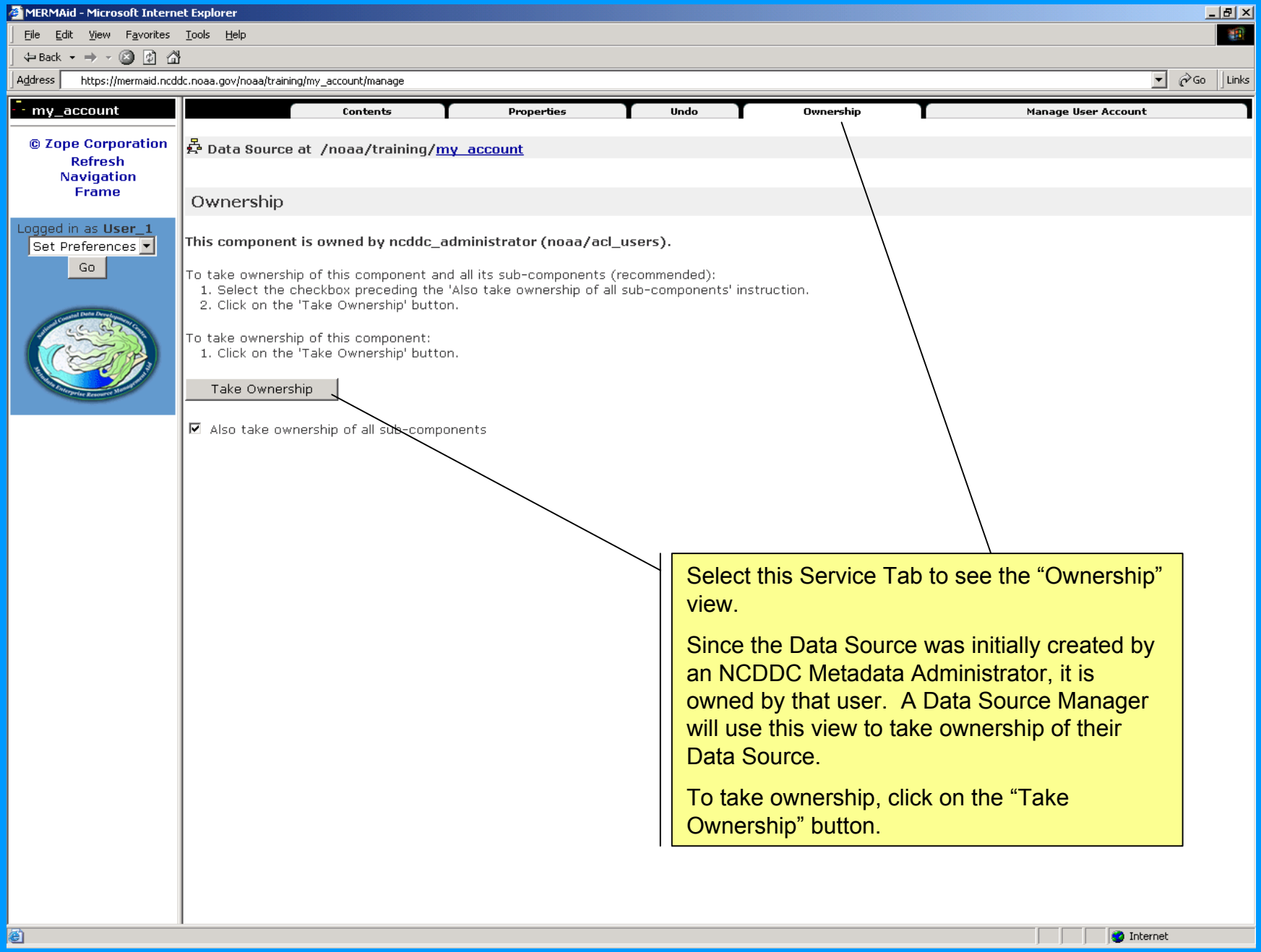
Select this Service Tab to see the “Undo” view.

This view provides the ability to undo changes made to MERMAid components. These changes include adding, editing, renaming, copying, cutting, pasting, deleting, exporting and importing.

This example shows only one transaction that can be undone.

To undo a transaction, select the checkbox(es) next to the item(s) that you want to undo and click on the “Undo” button.

Data Source – “Ownership” View

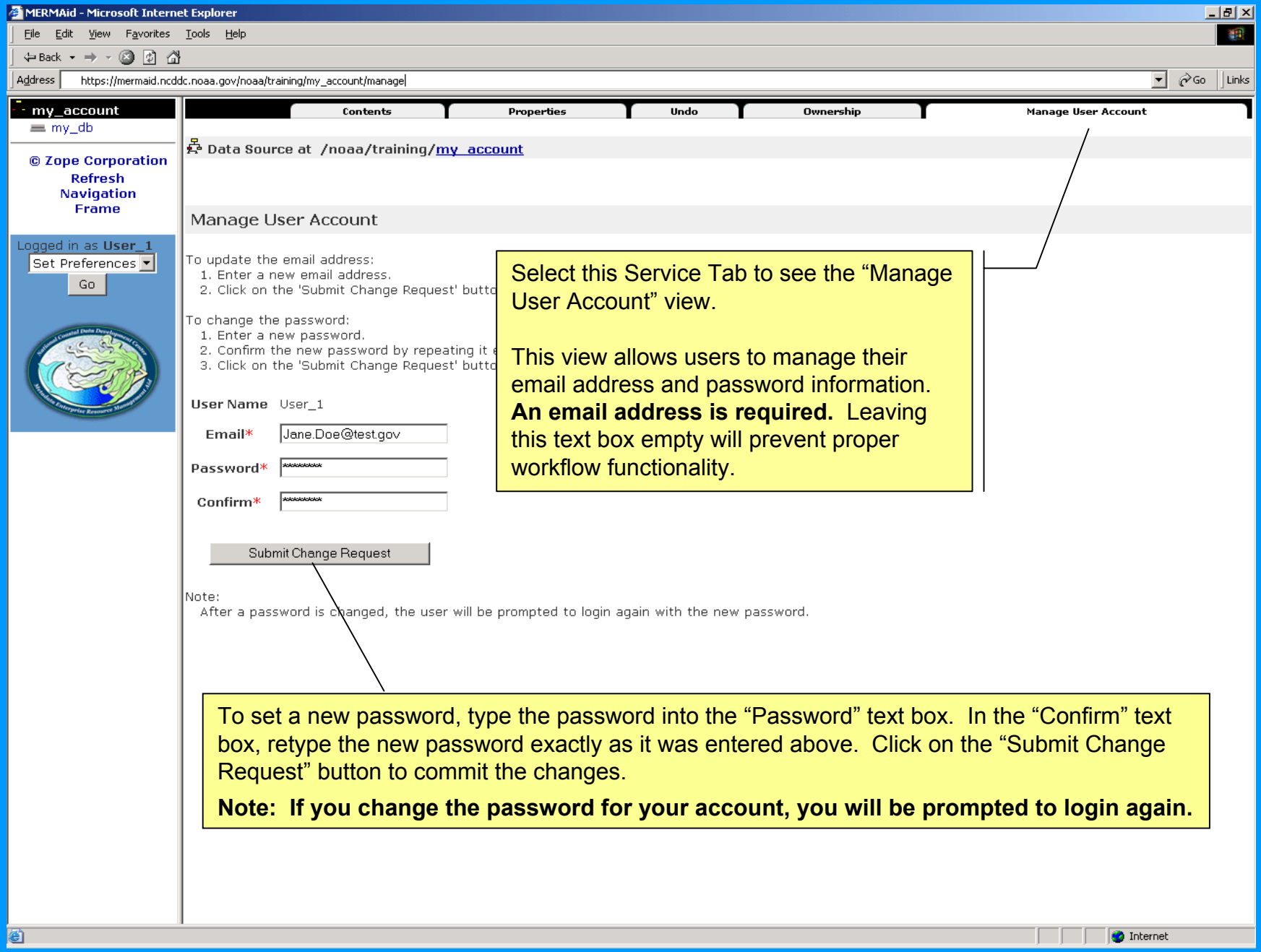


Select this Service Tab to see the “Ownership” view.

Since the Data Source was initially created by an NCDDC Metadata Administrator, it is owned by that user. A Data Source Manager will use this view to take ownership of their Data Source.

To take ownership, click on the “Take Ownership” button.

Data Source – “Manage User Account” View



Select this Service Tab to see the “Manage User Account” view.

This view allows users to manage their email address and password information. **An email address is required.** Leaving this text box empty will prevent proper workflow functionality.

To set a new password, type the password into the “Password” text box. In the “Confirm” text box, retype the new password exactly as it was entered above. Click on the “Submit Change Request” button to commit the changes.

Note: If you change the password for your account, you will be prompted to login again.

Creating a Database

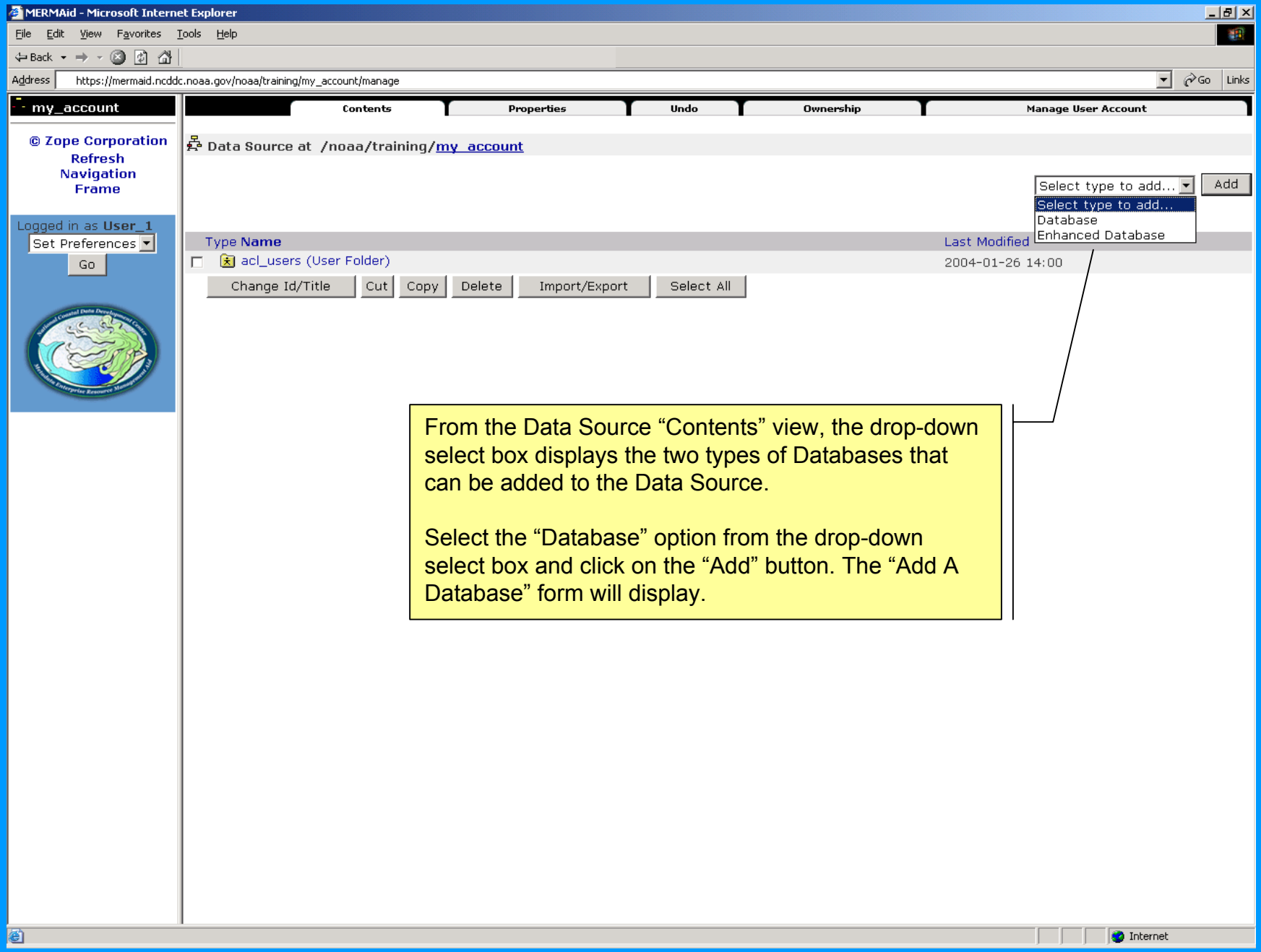
Databases are created at the Data Source level from the “Contents” view.

Two types of Databases can be added to the Data Source:

- **Database:** a Database is designed to store ***100 Records*** or *less*.
- **Enhanced Database:** an Enhanced Database is designed to efficiently store thousands of Records.

Inside a Data Source, you can create any number of Databases necessary to organize your Records. **You MAY NOT create Databases inside of Databases.** At any time, you can reorganize Records by **cutting and pasting** them from one Database to another. Records may also be moved between Databases and Enhanced Databases.

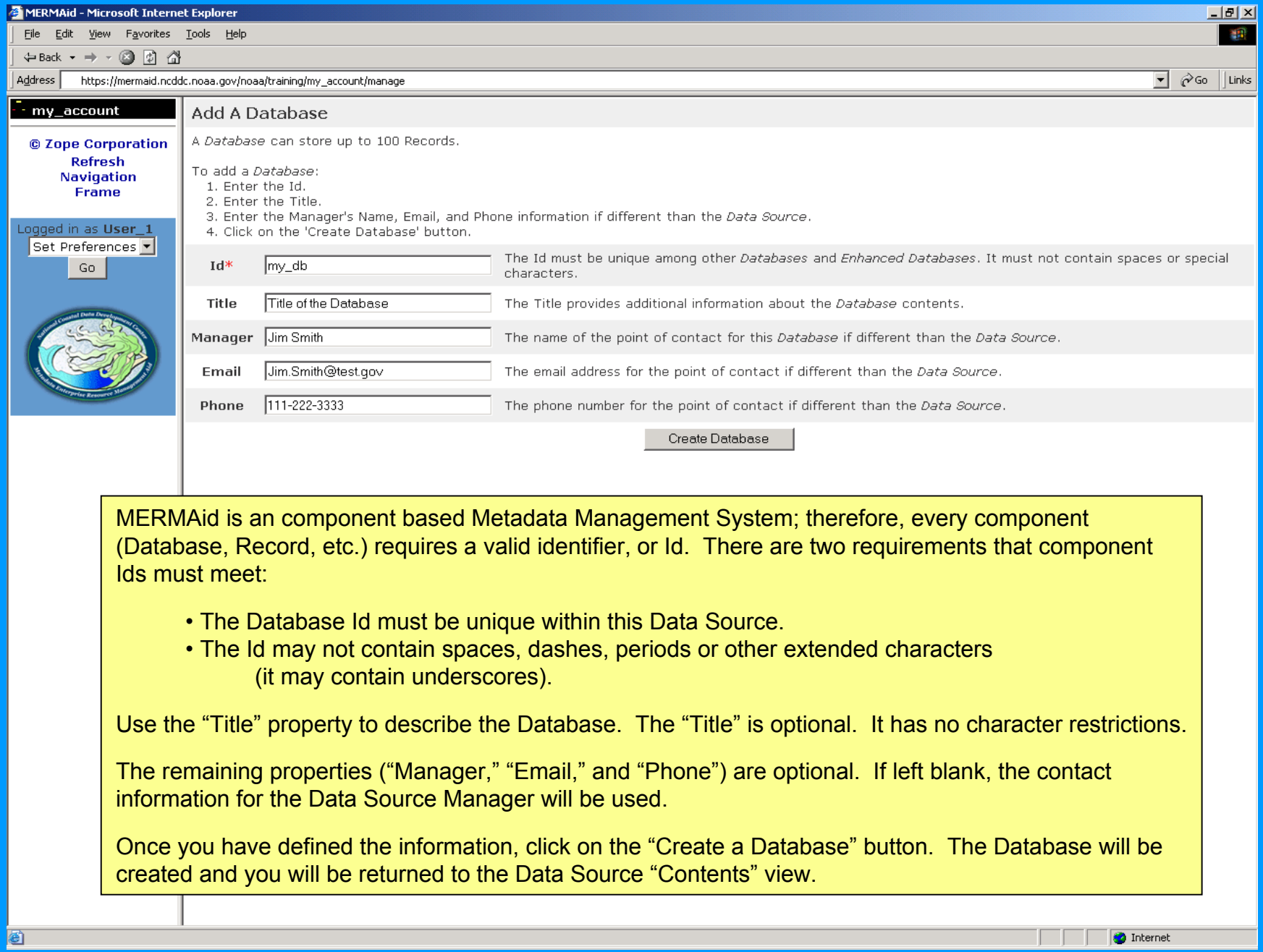
Data Source – Creating a Database



From the Data Source “Contents” view, the drop-down select box displays the two types of Databases that can be added to the Data Source.

Select the “Database” option from the drop-down select box and click on the “Add” button. The “Add A Database” form will display.

“Add A Database” Form



MERMAid is an component based Metadata Management System; therefore, every component (Database, Record, etc.) requires a valid identifier, or Id. There are two requirements that component Ids must meet:

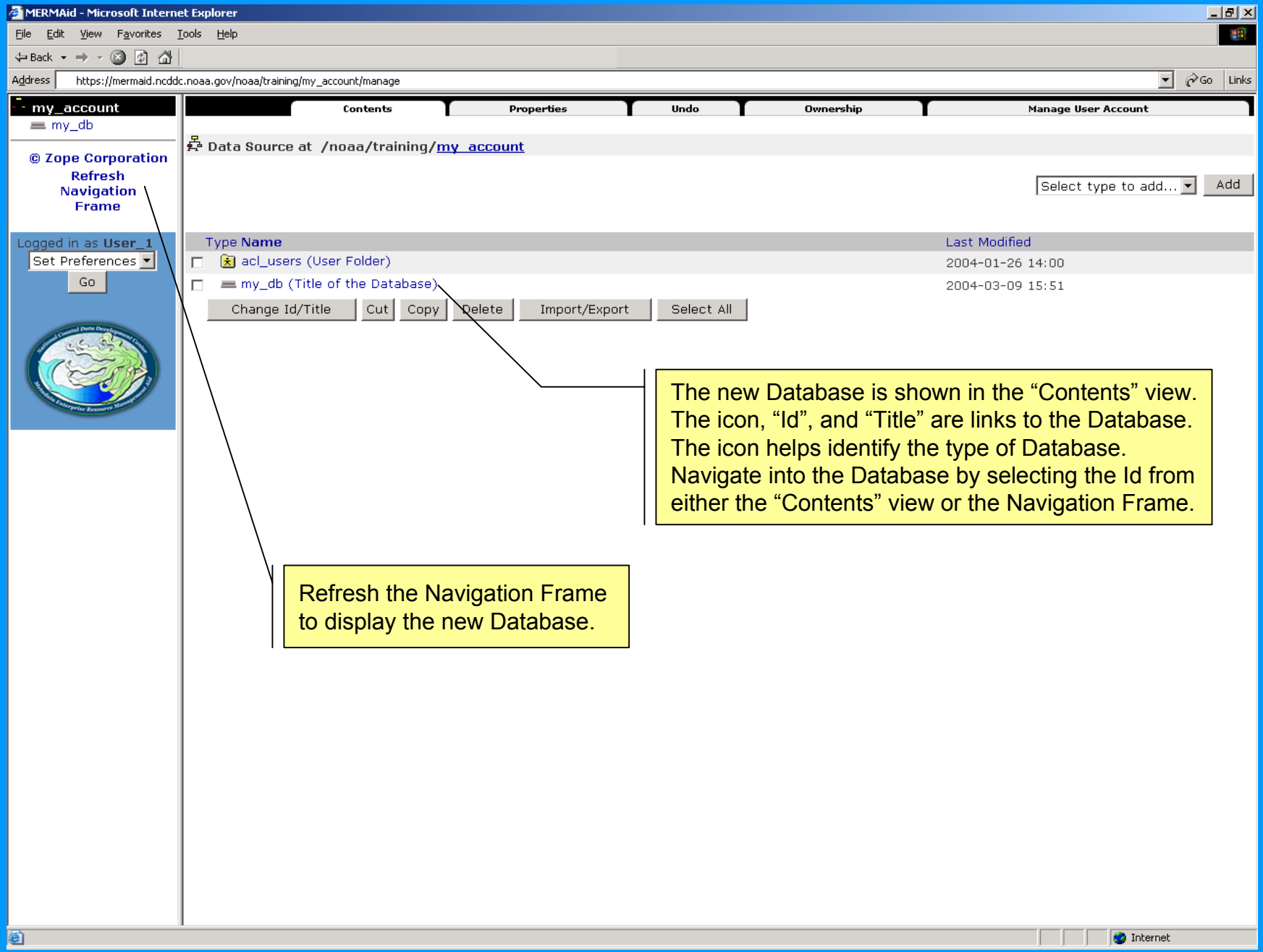
- The Database Id must be unique within this Data Source.
- The Id may not contain spaces, dashes, periods or other extended characters (it may contain underscores).

Use the “Title” property to describe the Database. The “Title” is optional. It has no character restrictions.

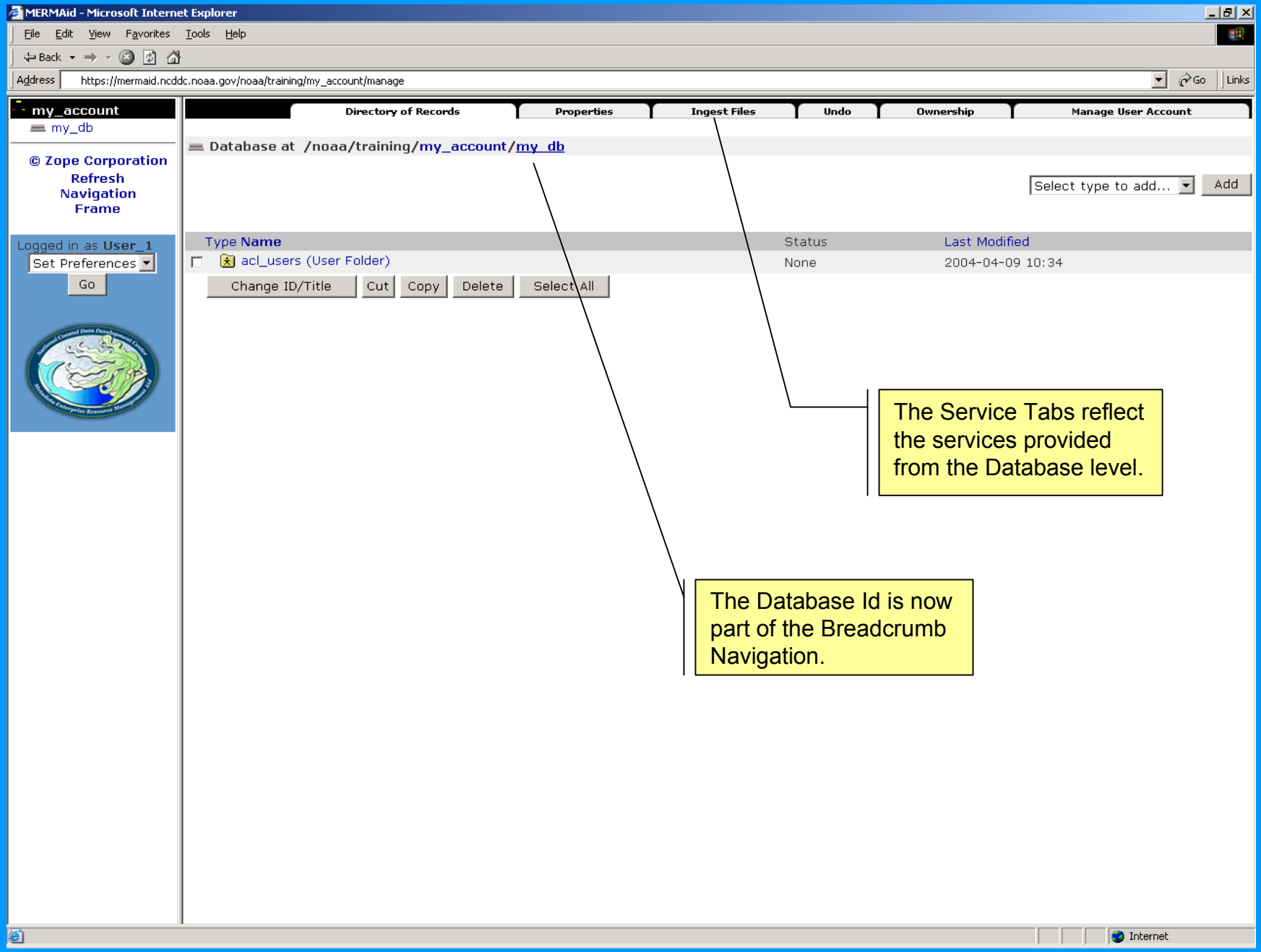
The remaining properties (“Manager,” “Email,” and “Phone”) are optional. If left blank, the contact information for the Data Source Manager will be used.

Once you have defined the information, click on the “Create a Database” button. The Database will be created and you will be returned to the Data Source “Contents” view.

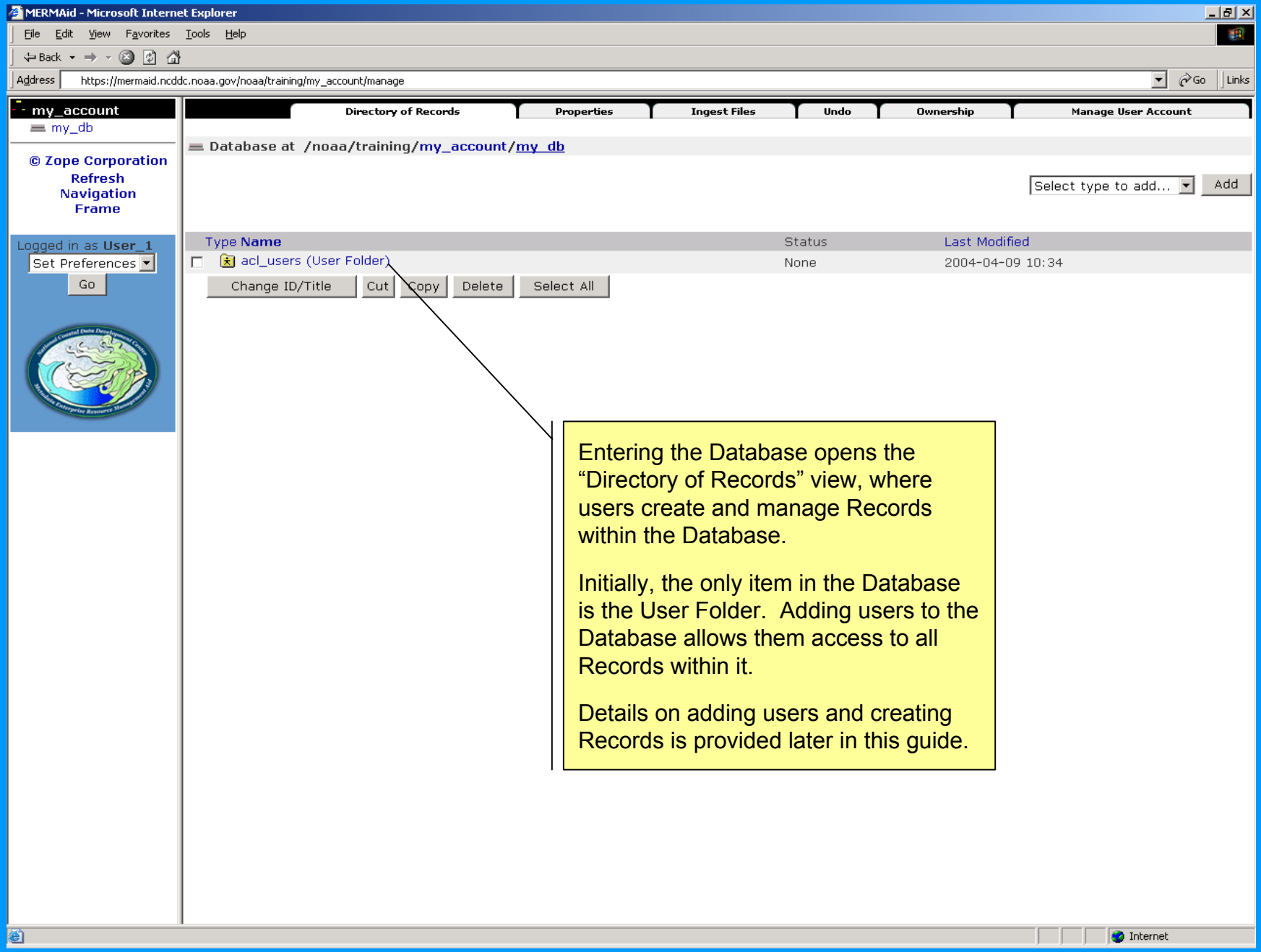
Data Source - “Contents” View with Database



Database Environment



Database – “Directory of Records” View

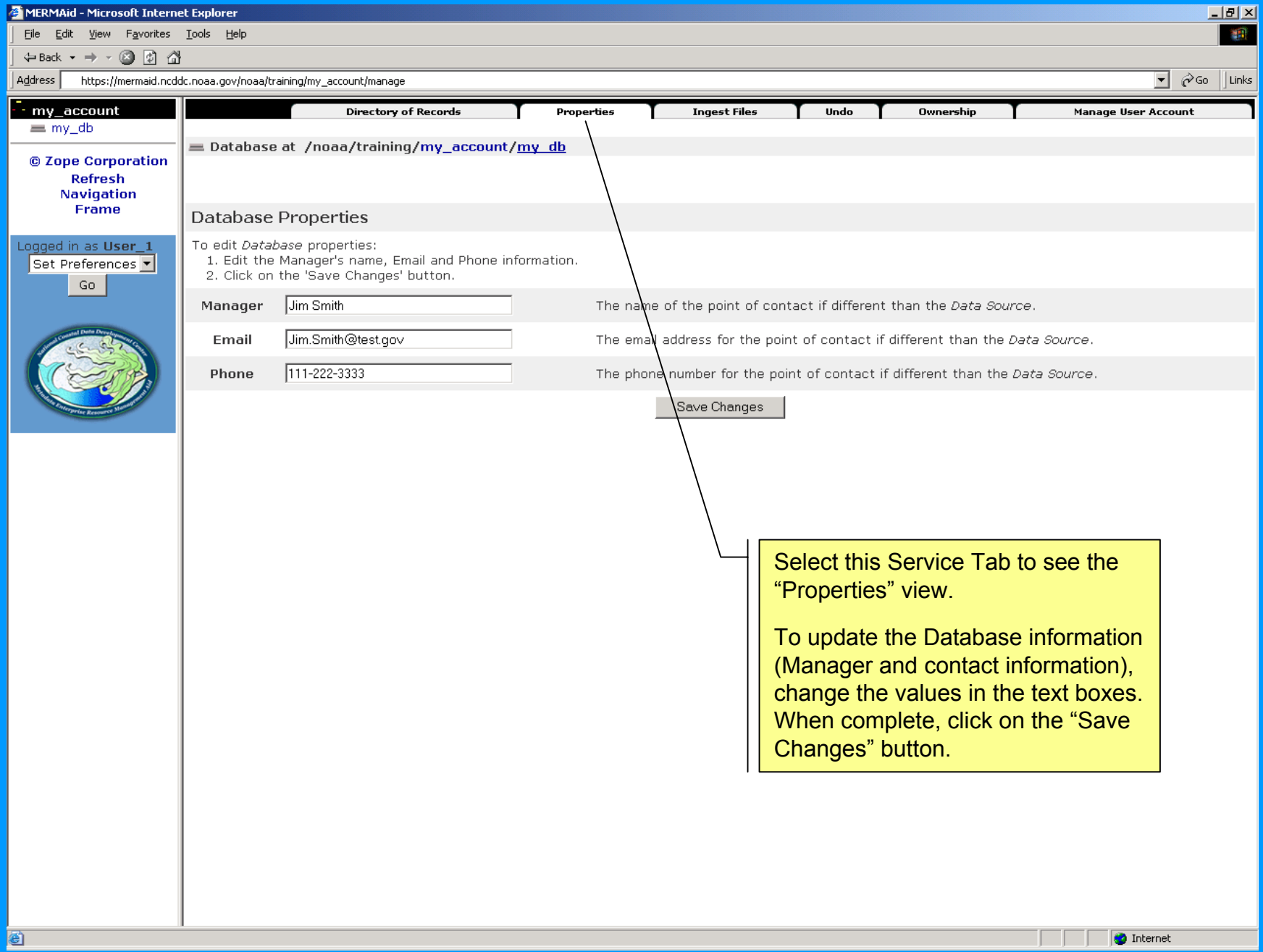


Entering the Database opens the “Directory of Records” view, where users create and manage Records within the Database.

Initially, the only item in the Database is the User Folder. Adding users to the Database allows them access to all Records within it.

Details on adding users and creating Records is provided later in this guide.

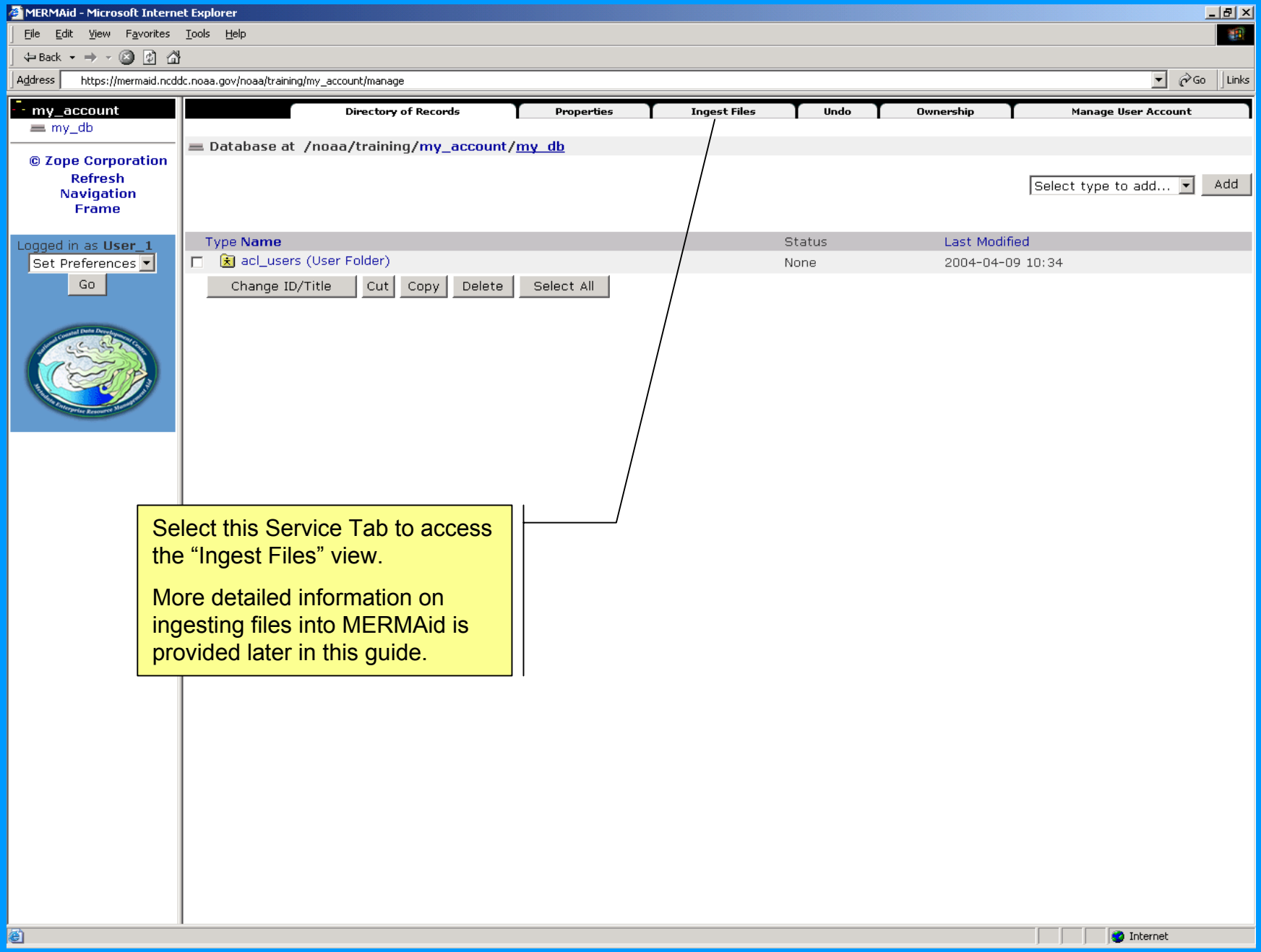
Database – “Properties” View



Select this Service Tab to see the “Properties” view.

To update the Database information (Manager and contact information), change the values in the text boxes. When complete, click on the “Save Changes” button.

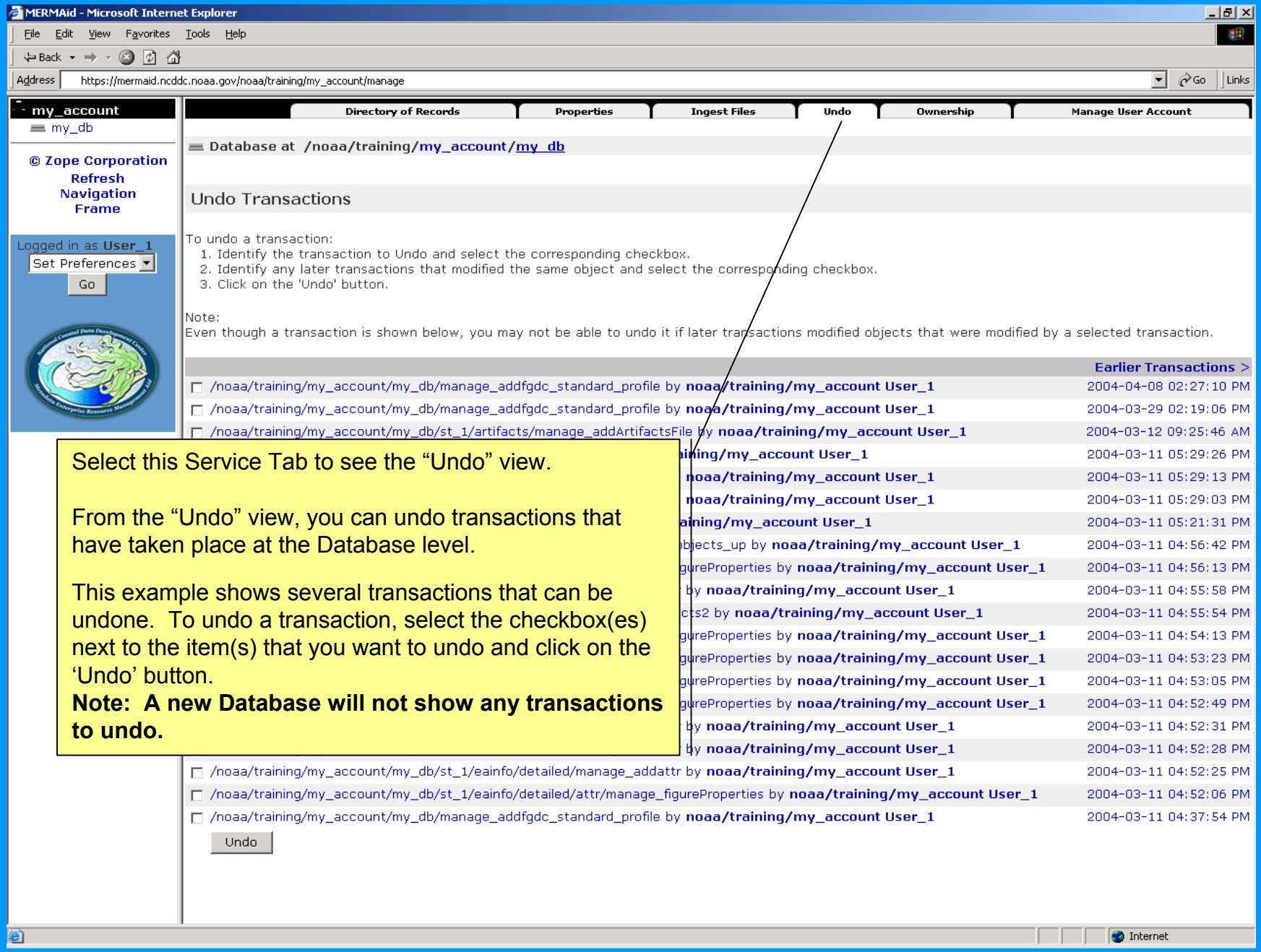
Database – “Ingest Files” Tab



Select this Service Tab to access the “Ingest Files” view.

More detailed information on ingesting files into MERMAid is provided later in this guide.

Database – “Undo” View



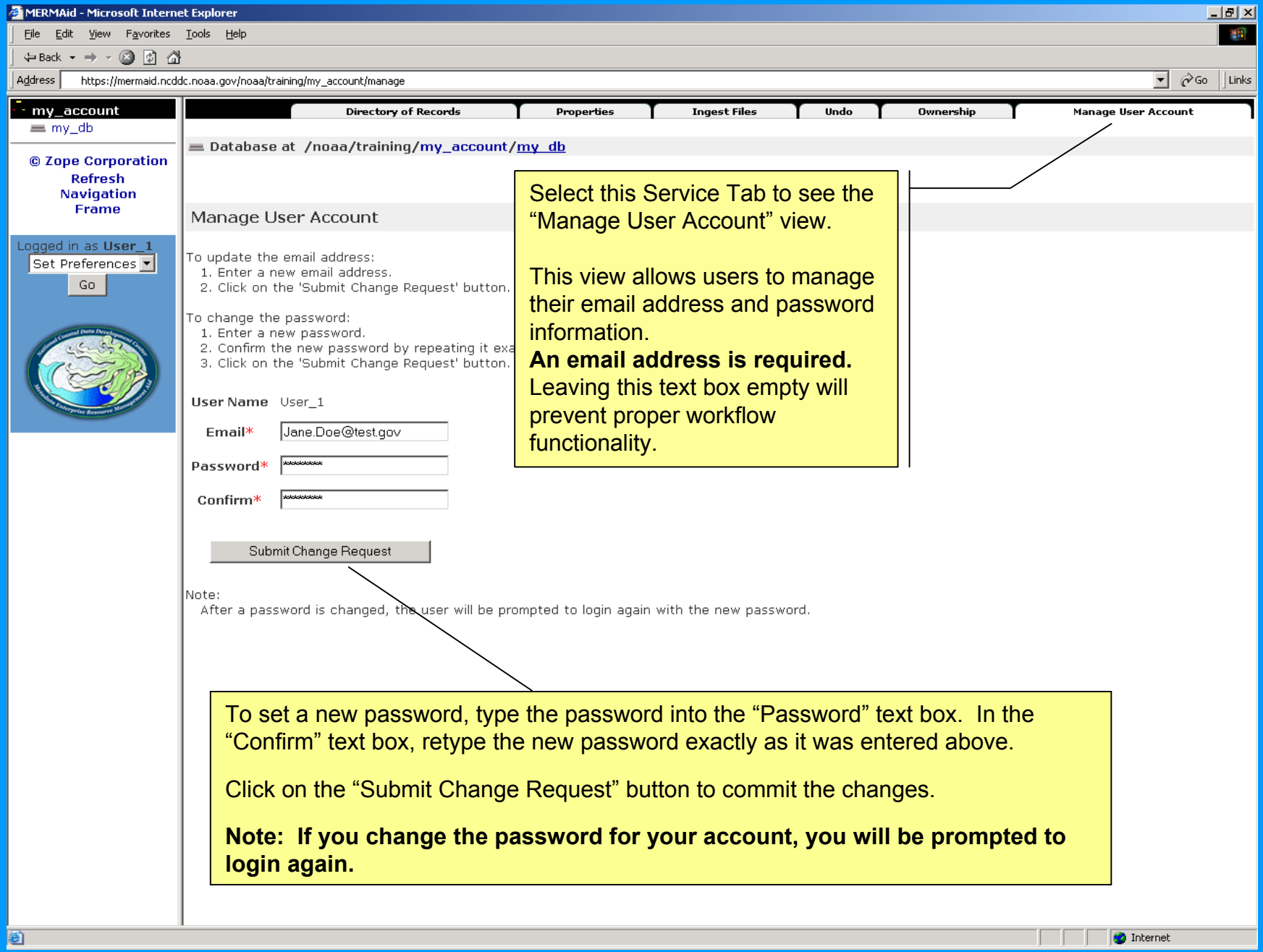
Select this Service Tab to see the “Undo” view.

From the “Undo” view, you can undo transactions that have taken place at the Database level.

This example shows several transactions that can be undone. To undo a transaction, select the checkbox(es) next to the item(s) that you want to undo and click on the ‘Undo’ button.

Note: A new Database will not show any transactions to undo.

Database – “Manage User Account” View



Select this Service Tab to see the “Manage User Account” view.

This view allows users to manage their email address and password information.
An email address is required.
Leaving this text box empty will prevent proper workflow functionality.

To set a new password, type the password into the “Password” text box. In the “Confirm” text box, retype the new password exactly as it was entered above.

Click on the “Submit Change Request” button to commit the changes.

Note: If you change the password for your account, you will be prompted to login again.

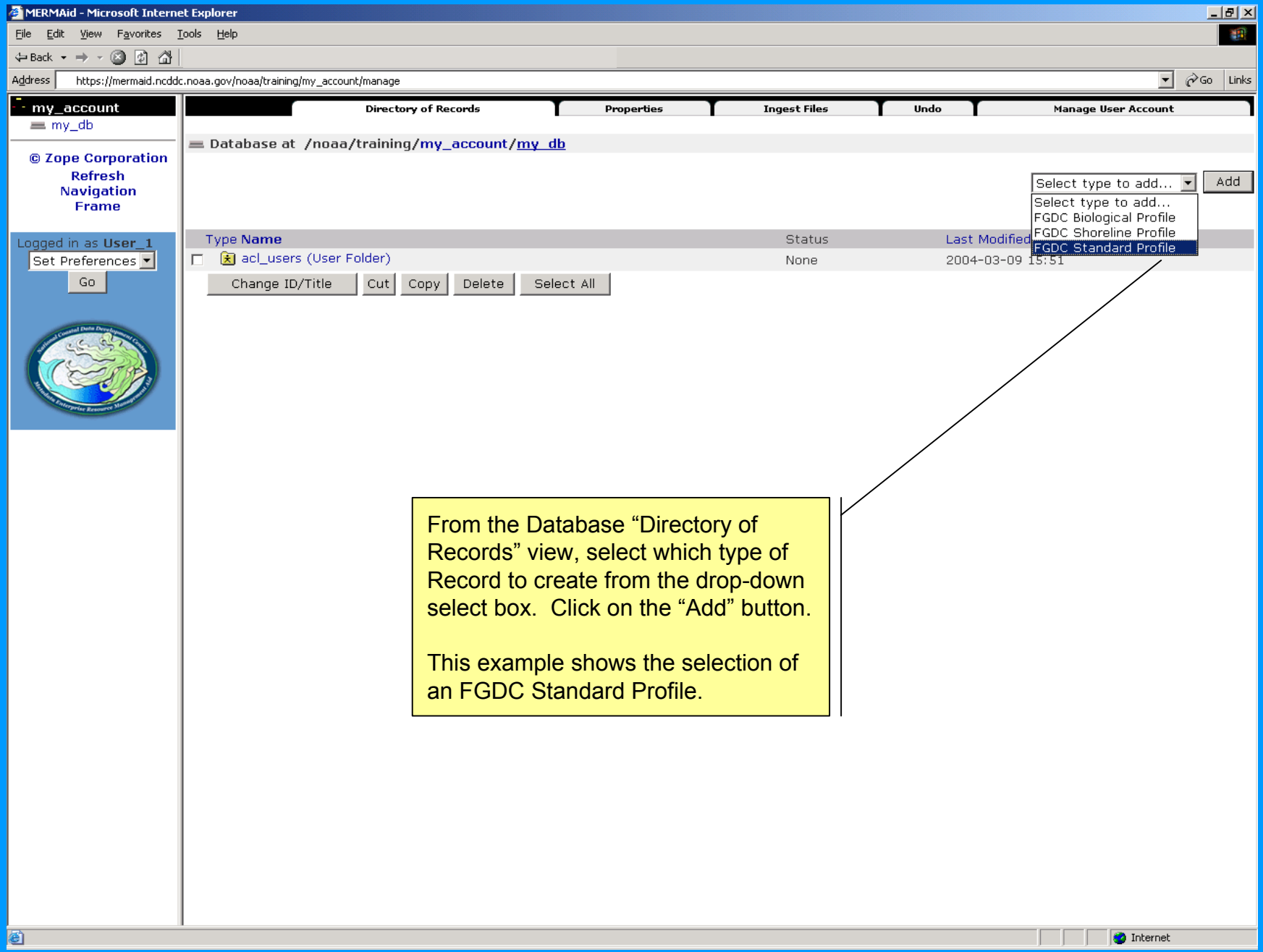
Creating A Metadata Record

Records are created at the Database level from the “Directory of Records” view.

Three types of Records can be added to the Database:

- **FGDC Standard Profile**
  - Content Standard for Digital Geospatial Metadata
- **FGDC Biological Profile**
  - Content Standard for Digital Geospatial Metadata Part 1: Biological Data Profile
- **FGDC Shoreline Profile**
  - Shoreline Profile of the Content Standard for Digital Geospatial Metadata

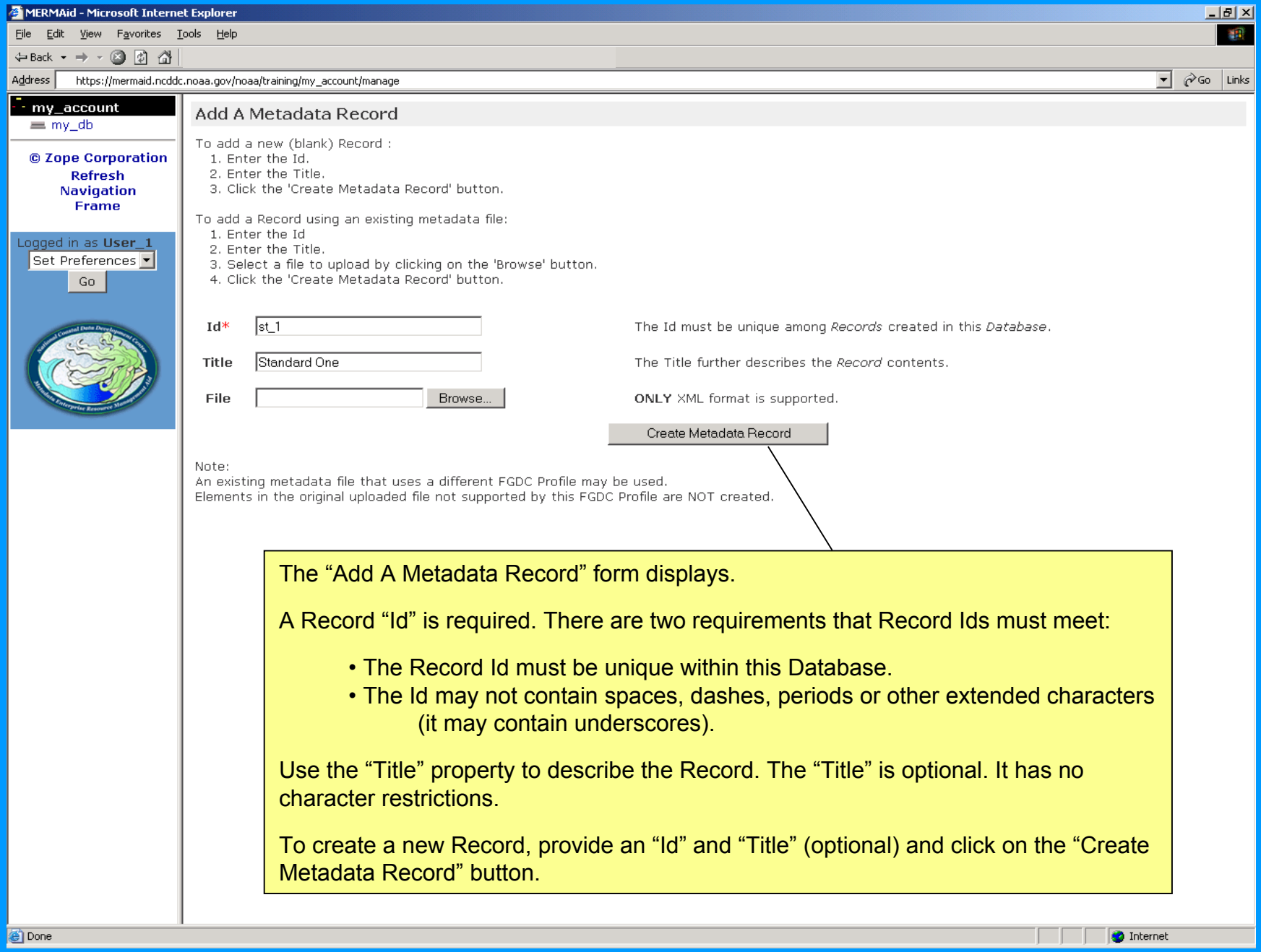
Creating A Metadata Record



From the Database “Directory of Records” view, select which type of Record to create from the drop-down select box. Click on the “Add” button.

This example shows the selection of an FGDC Standard Profile.

“Add A Metadata Record” Form



The “Add A Metadata Record” form displays.

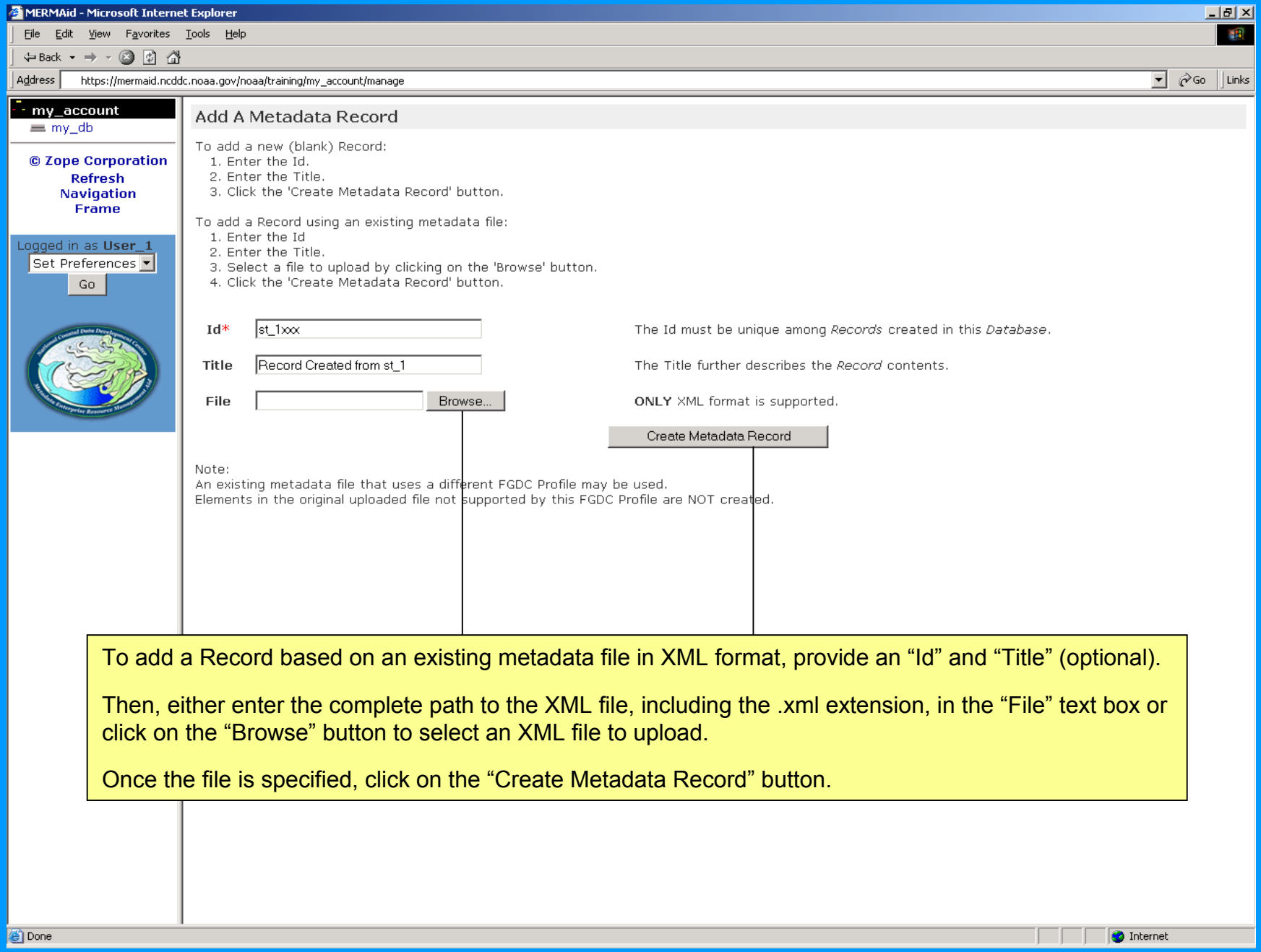
A Record “Id” is required. There are two requirements that Record Ids must meet:

- The Record Id must be unique within this Database.
- The Id may not contain spaces, dashes, periods or other extended characters (it may contain underscores).

Use the “Title” property to describe the Record. The “Title” is optional. It has no character restrictions.

To create a new Record, provide an “Id” and “Title” (optional) and click on the “Create Metadata Record” button.

“Add A Metadata Record” Form

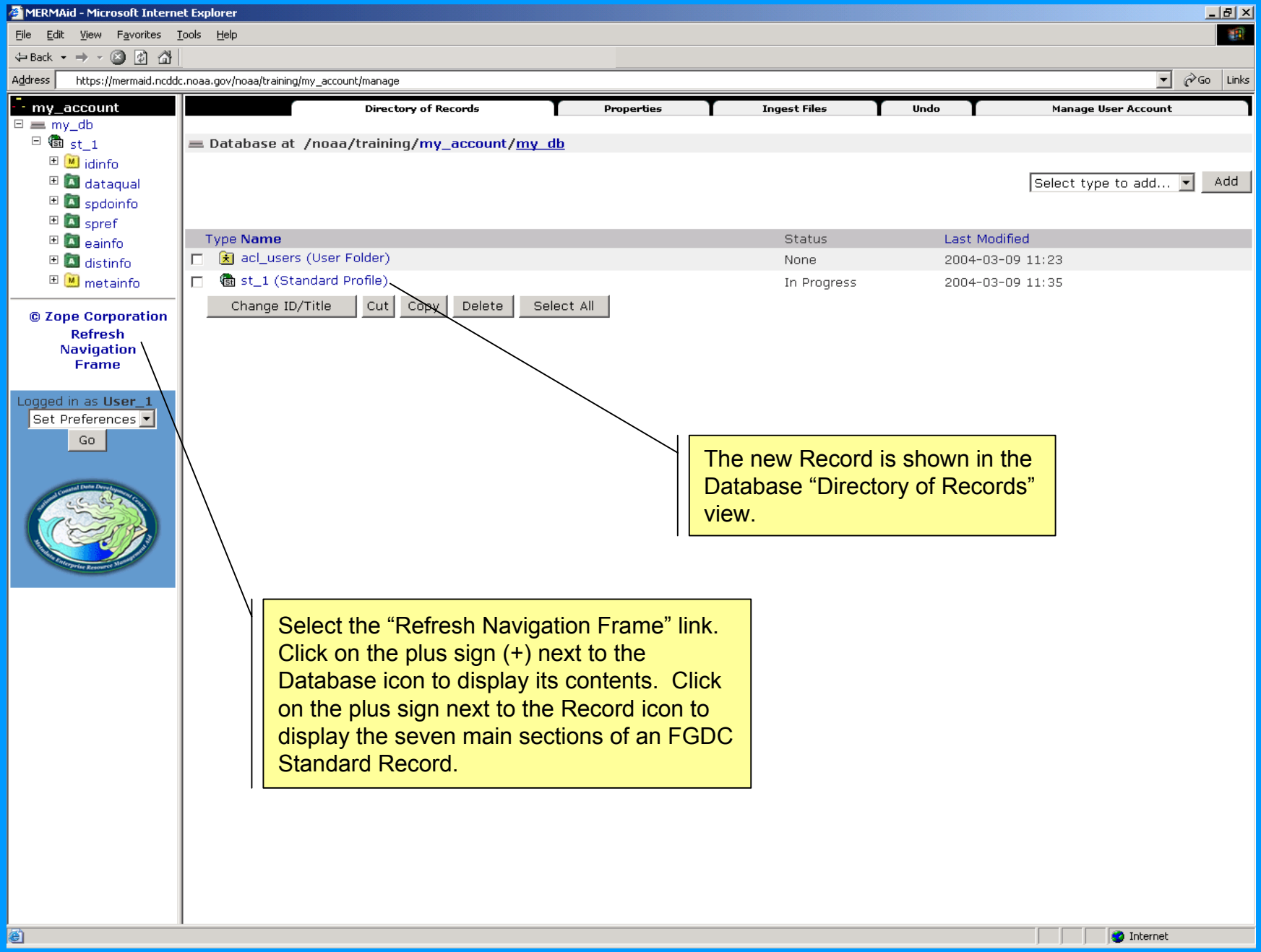


To add a Record based on an existing metadata file in XML format, provide an “Id” and “Title” (optional).

Then, either enter the complete path to the XML file, including the .xml extension, in the “File” text box or click on the “Browse” button to select an XML file to upload.

Once the file is specified, click on the “Create Metadata Record” button.

Database – “Directory of Records” View with Record



The new Record is shown in the Database “Directory of Records” view.

Select the “Refresh Navigation Frame” link. Click on the plus sign (+) next to the Database icon to display its contents. Click on the plus sign next to the Record icon to display the seven main sections of an FGDC Standard Record.

Metadata Record Environment

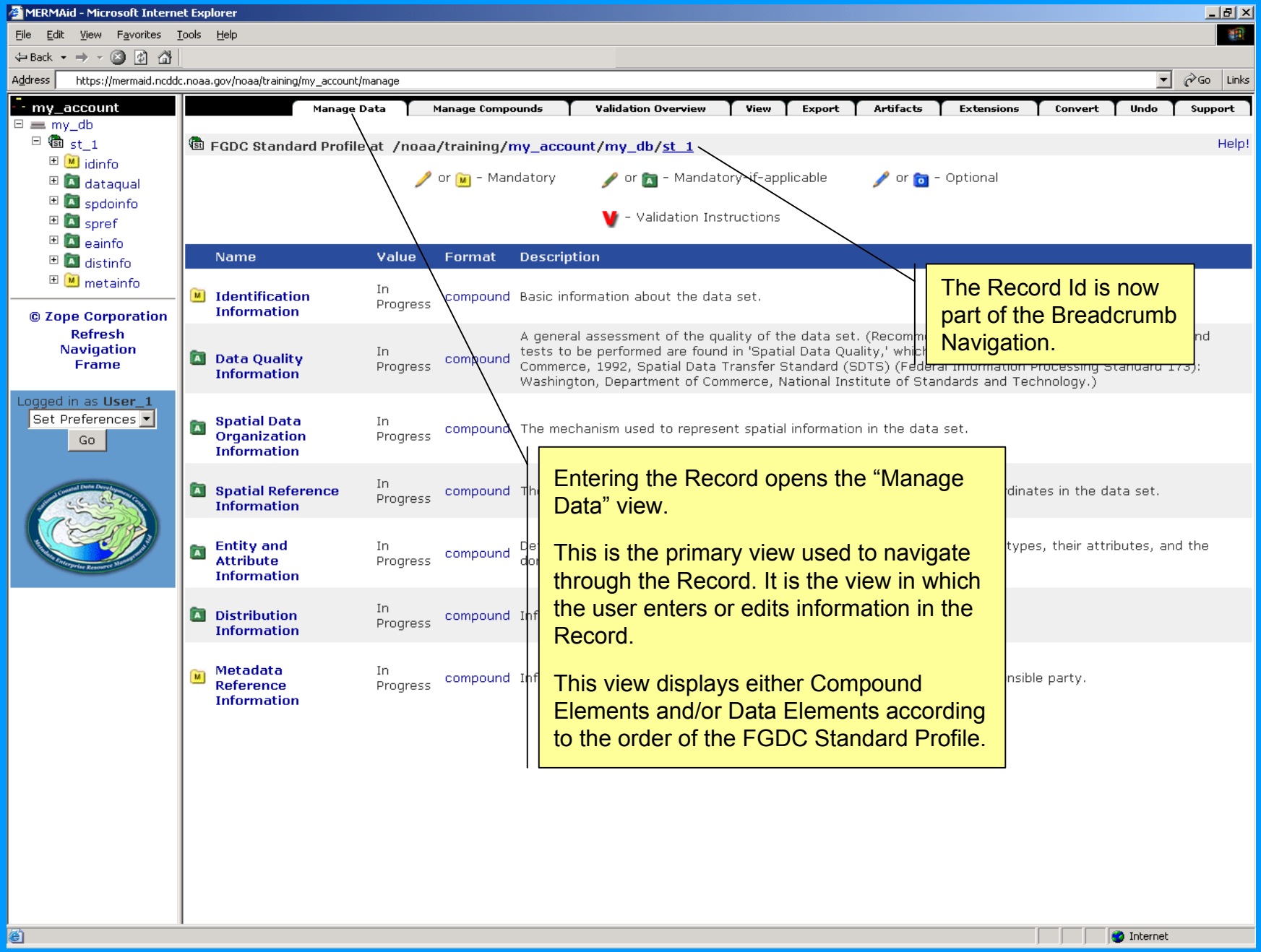
To open the Record, select the Record Id from either the Database “Directory of Records” view or the Navigation Frame.

The “Manage Data” view is the default view for the Record.

The Record has 10 different Service Tabs that allow users to enter, manage, validate, view, export and perform other functions.

In addition to the Service Tabs, many help features have been added to assist users in entering and validating information within the Record.

Metadata Record Environment – “Manage Data” View



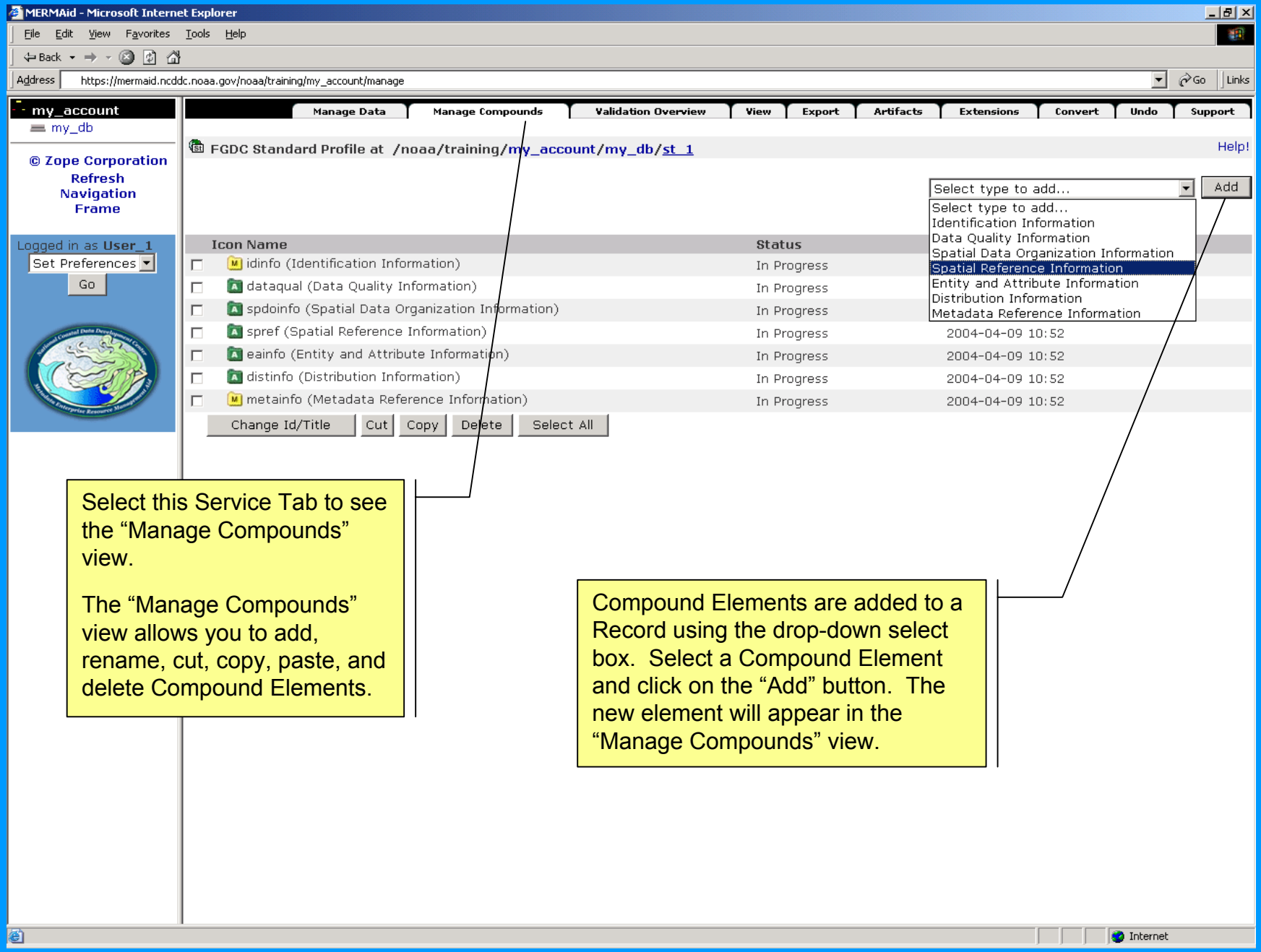
The Record Id is now part of the Breadcrumb Navigation.

Entering the Record opens the “Manage Data” view.

This is the primary view used to navigate through the Record. It is the view in which the user enters or edits information in the Record.

This view displays either Compound Elements and/or Data Elements according to the order of the FGDC Standard Profile.

Metadata Record Environment – “Manage Compounds" View

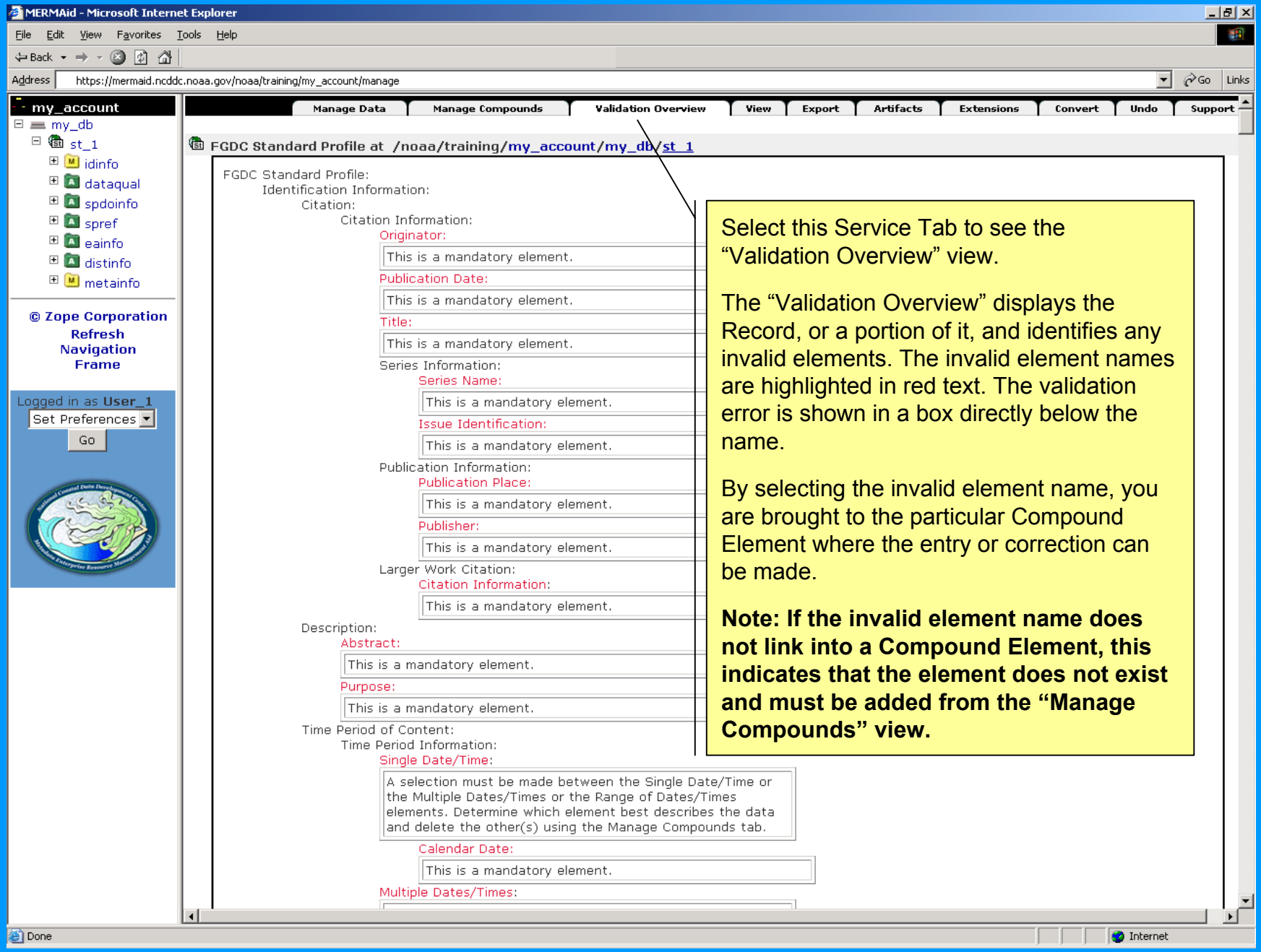


Select this Service Tab to see the “Manage Compounds” view.

The “Manage Compounds” view allows you to add, rename, cut, copy, paste, and delete Compound Elements.

Compound Elements are added to a Record using the drop-down select box. Select a Compound Element and click on the “Add” button. The new element will appear in the “Manage Compounds” view.

Metadata Record Environment – “Validation Overview” View



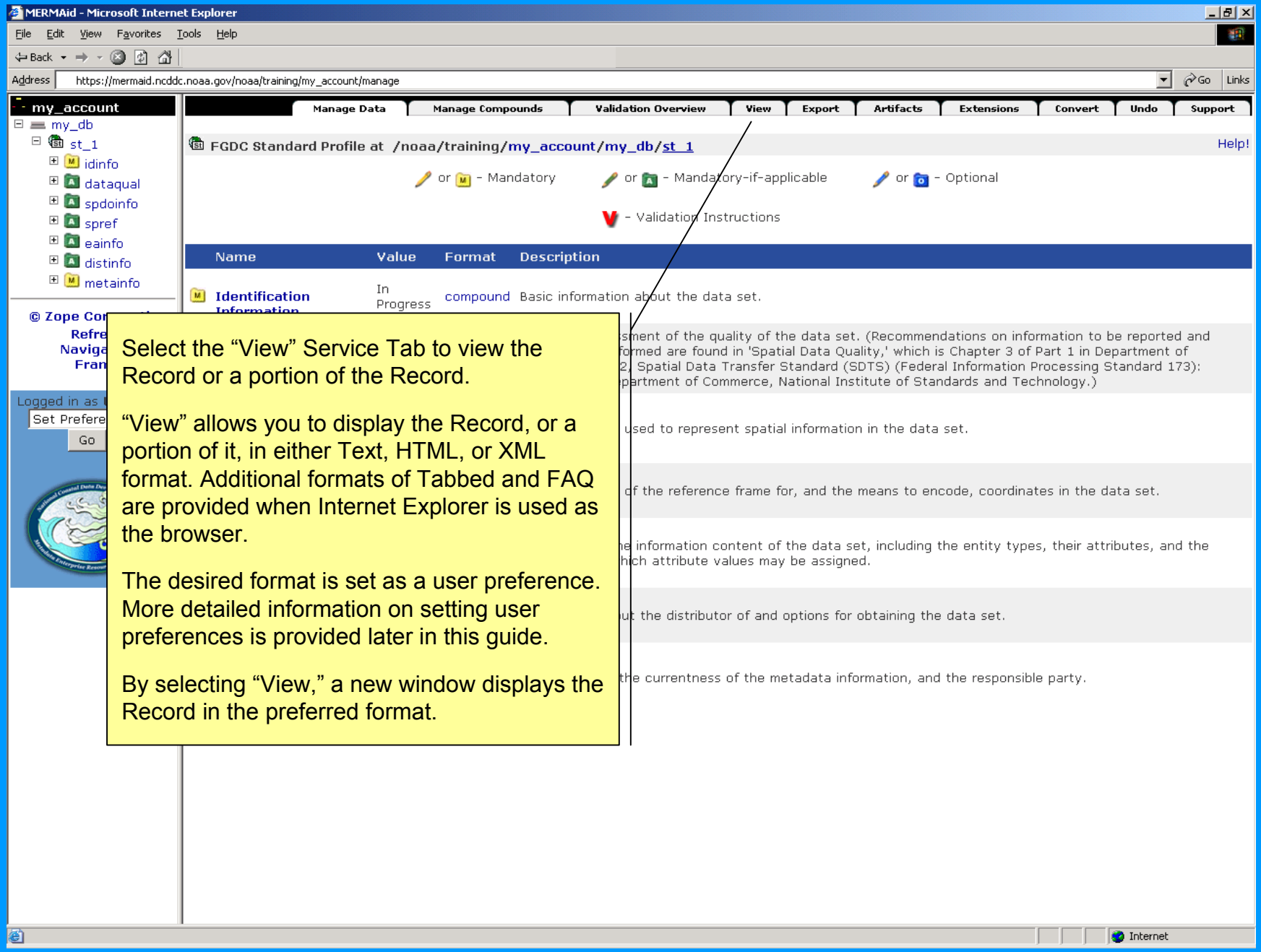
Select this Service Tab to see the “Validation Overview” view.

The “Validation Overview” displays the Record, or a portion of it, and identifies any invalid elements. The invalid element names are highlighted in red text. The validation error is shown in a box directly below the name.

By selecting the invalid element name, you are brought to the particular Compound Element where the entry or correction can be made.

Note: If the invalid element name does not link into a Compound Element, this indicates that the element does not exist and must be added from the “Manage Compounds” view.

Metadata Record Environment – “View” View



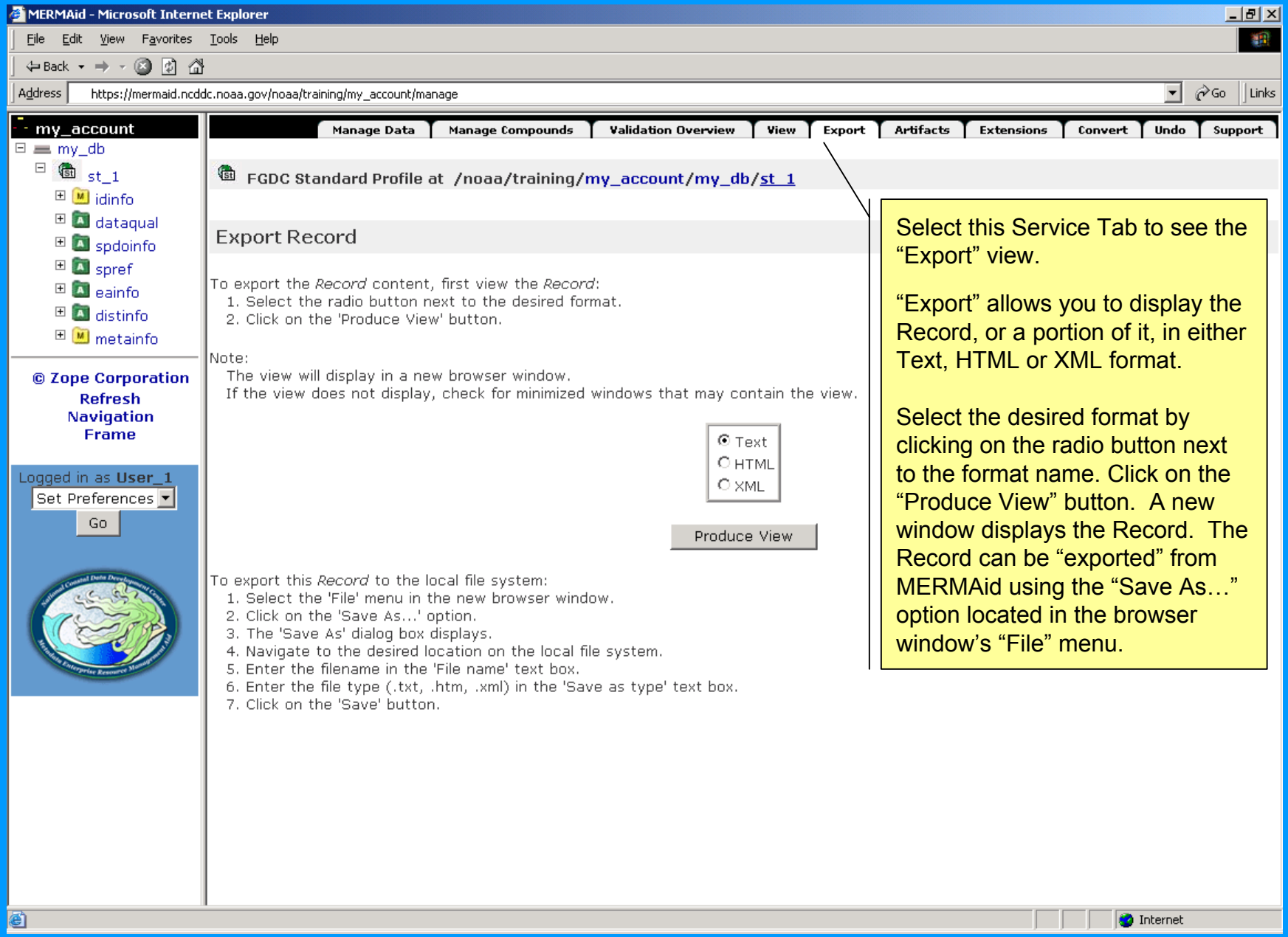
Select the “View” Service Tab to view the Record or a portion of the Record.

“View” allows you to display the Record, or a portion of it, in either Text, HTML, or XML format. Additional formats of Tabbed and FAQ are provided when Internet Explorer is used as the browser.

The desired format is set as a user preference. More detailed information on setting user preferences is provided later in this guide.

By selecting “View,” a new window displays the Record in the preferred format.

Metadata Record Environment – “Export” View

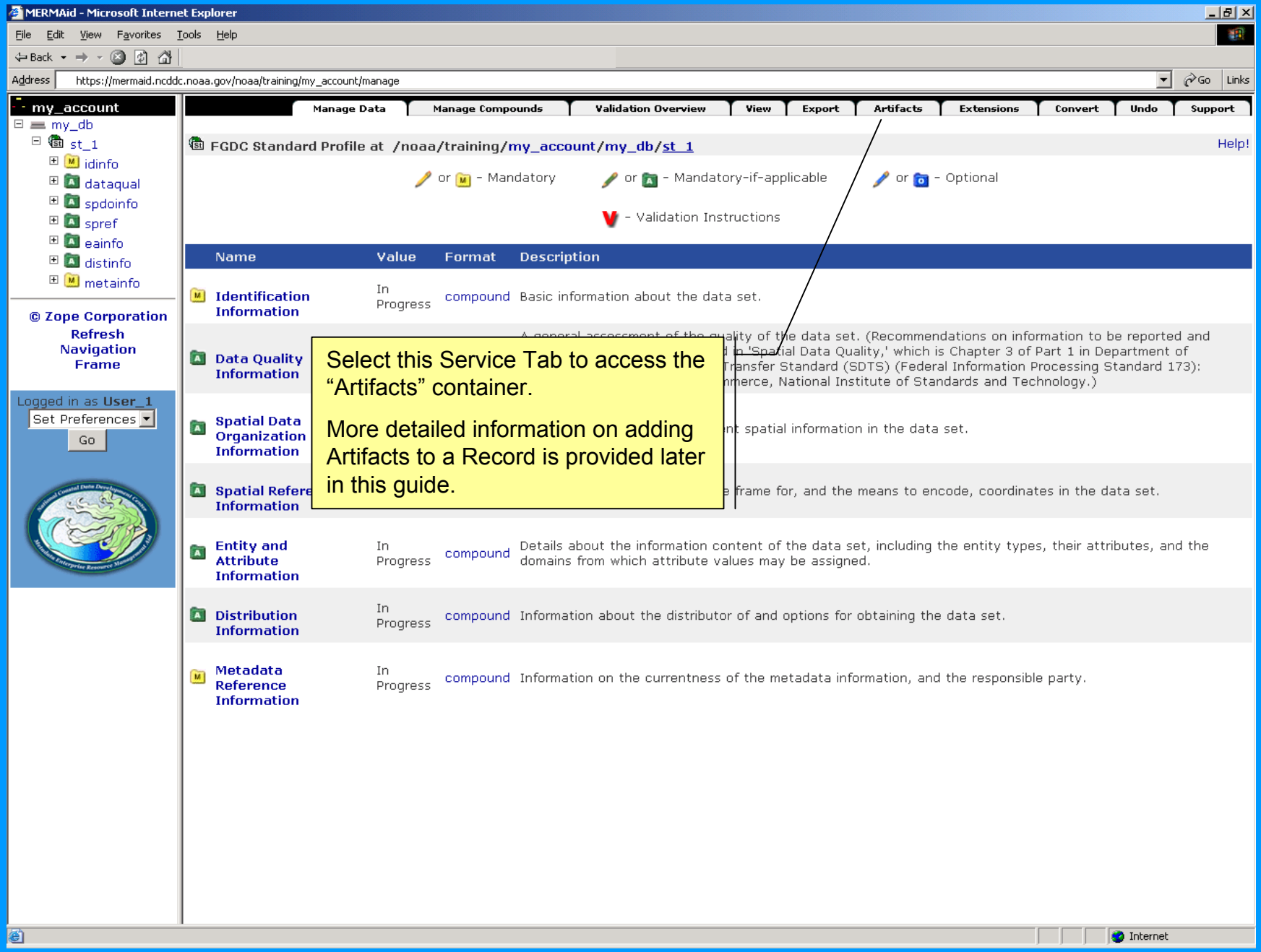


Select this Service Tab to see the “Export” view.

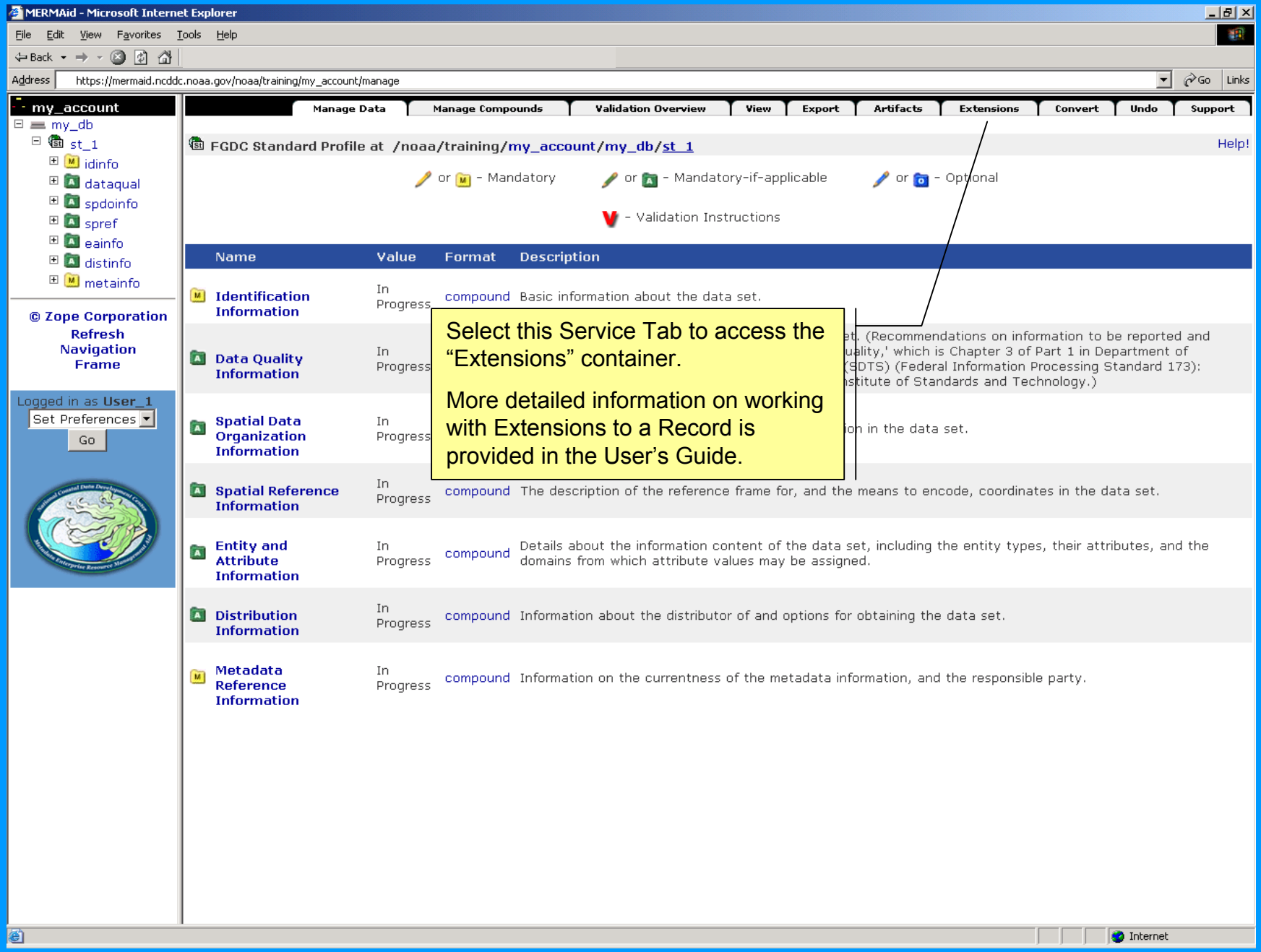
“Export” allows you to display the Record, or a portion of it, in either Text, HTML or XML format.

Select the desired format by clicking on the radio button next to the format name. Click on the “Produce View” button. A new window displays the Record. The Record can be “exported” from MERMAid using the “Save As…” option located in the browser window’s “File” menu.

Metadata Record Environment – “Artifacts” View



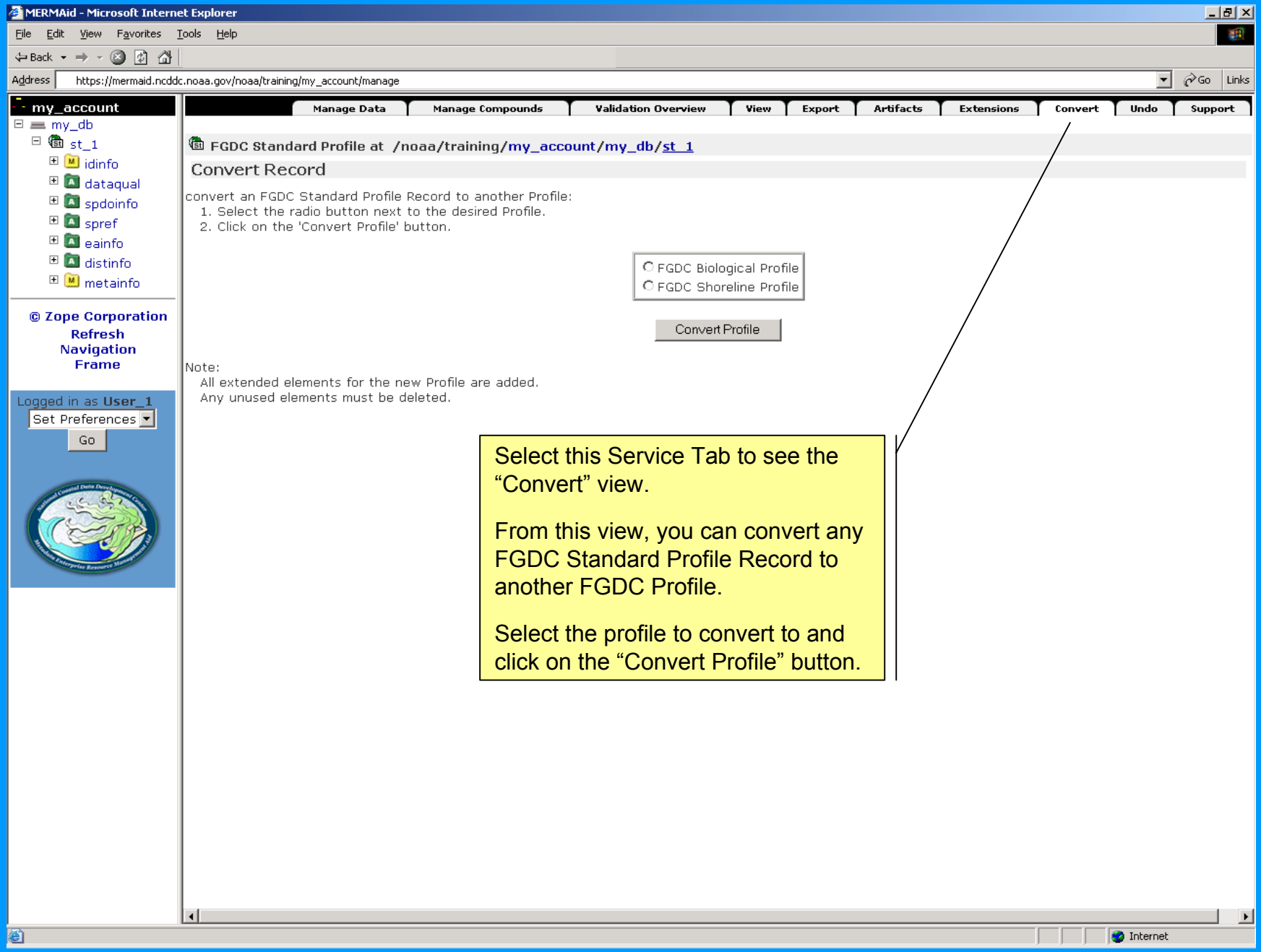
Metadata Record Environment – “Extensions” View



Select this Service Tab to access the “Extensions” container.

More detailed information on working with Extensions to a Record is provided in the User’s Guide.

Metadata Record Environment – “Convert” View

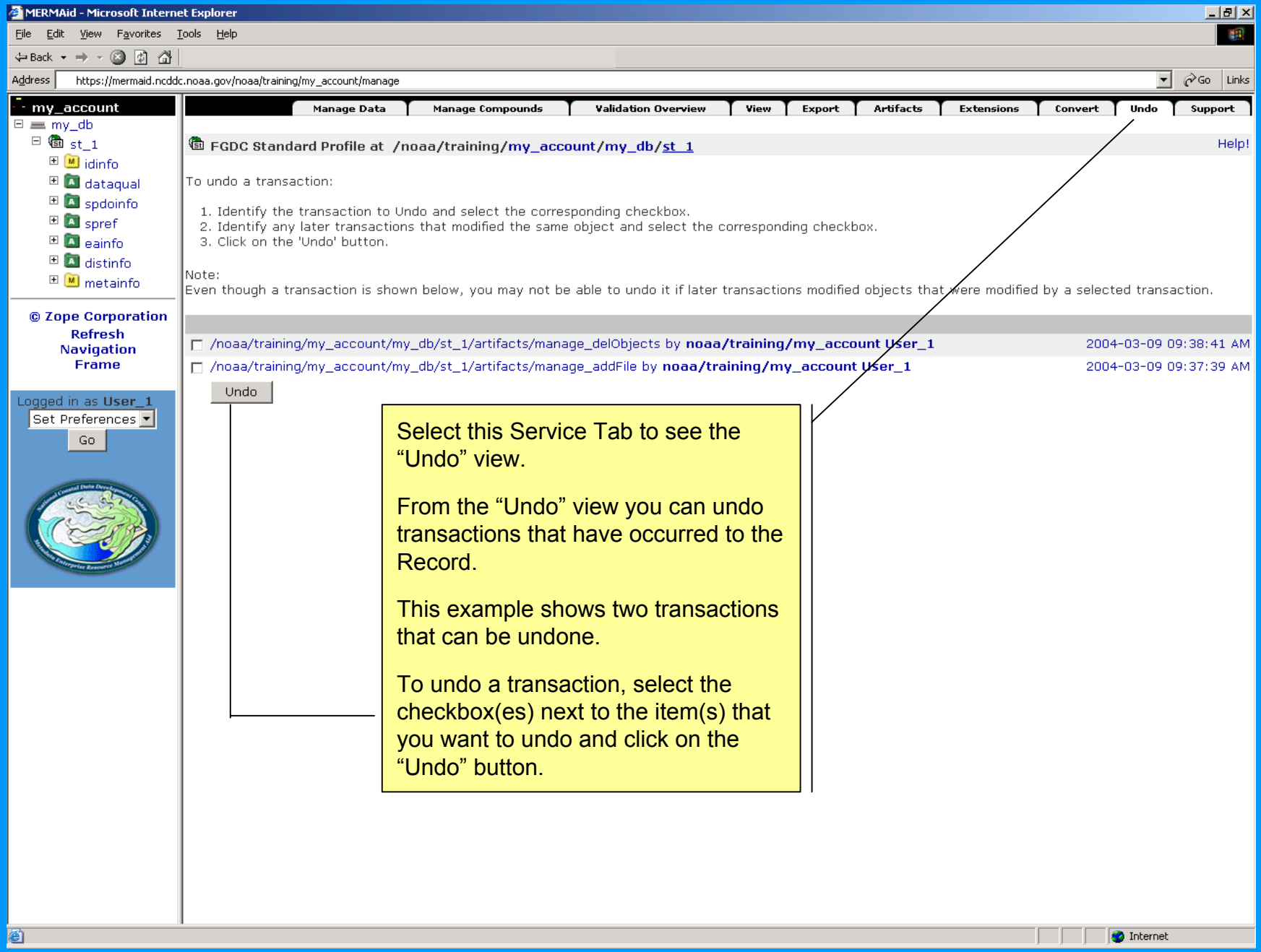


Select this Service Tab to see the “Convert” view.

From this view, you can convert any FGDC Standard Profile Record to another FGDC Profile.

Select the profile to convert to and click on the “Convert Profile” button.

Metadata Record Environment – “Undo” View



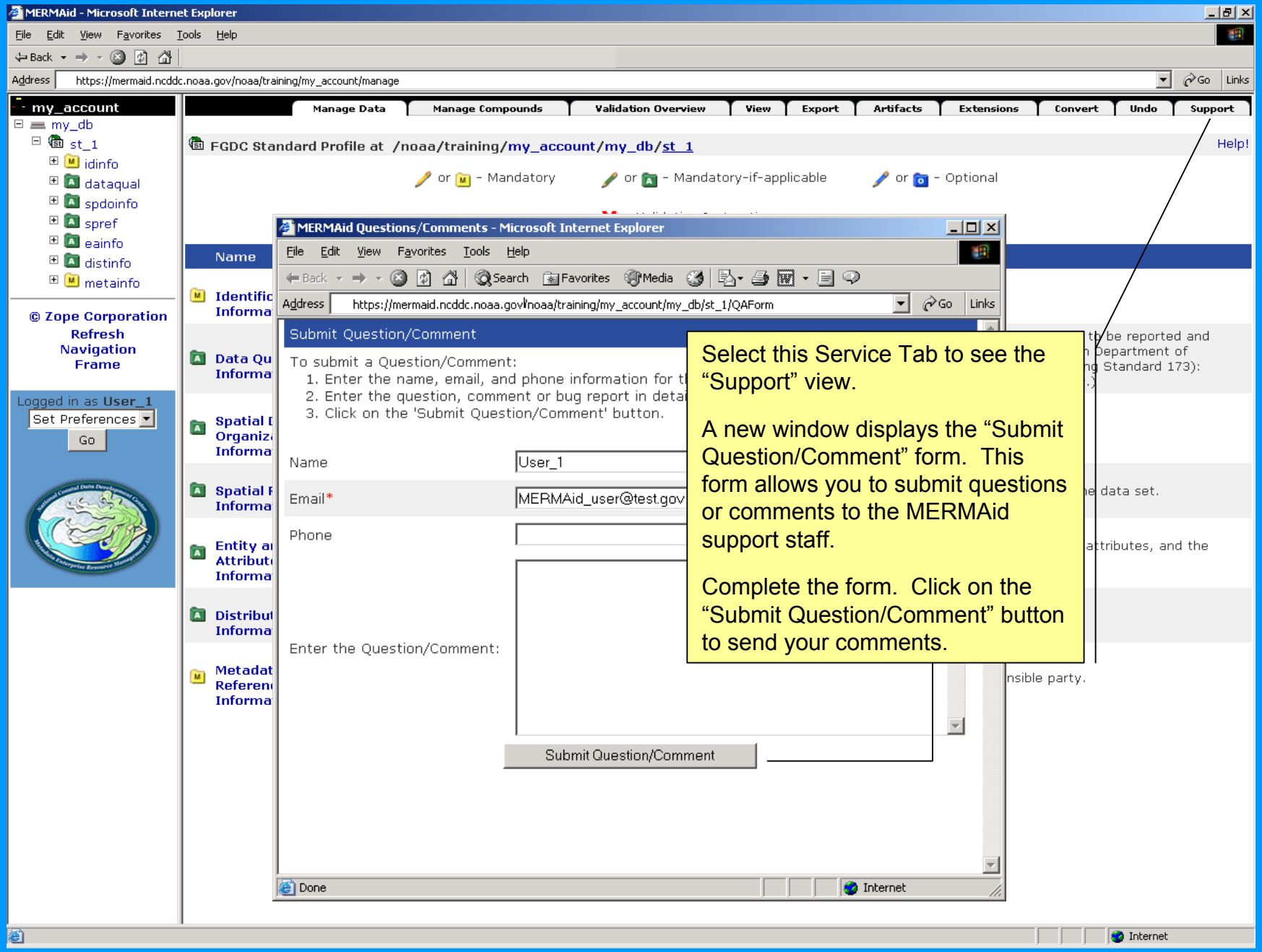
Select this Service Tab to see the “Undo” view.

From the “Undo” view you can undo transactions that have occurred to the Record.

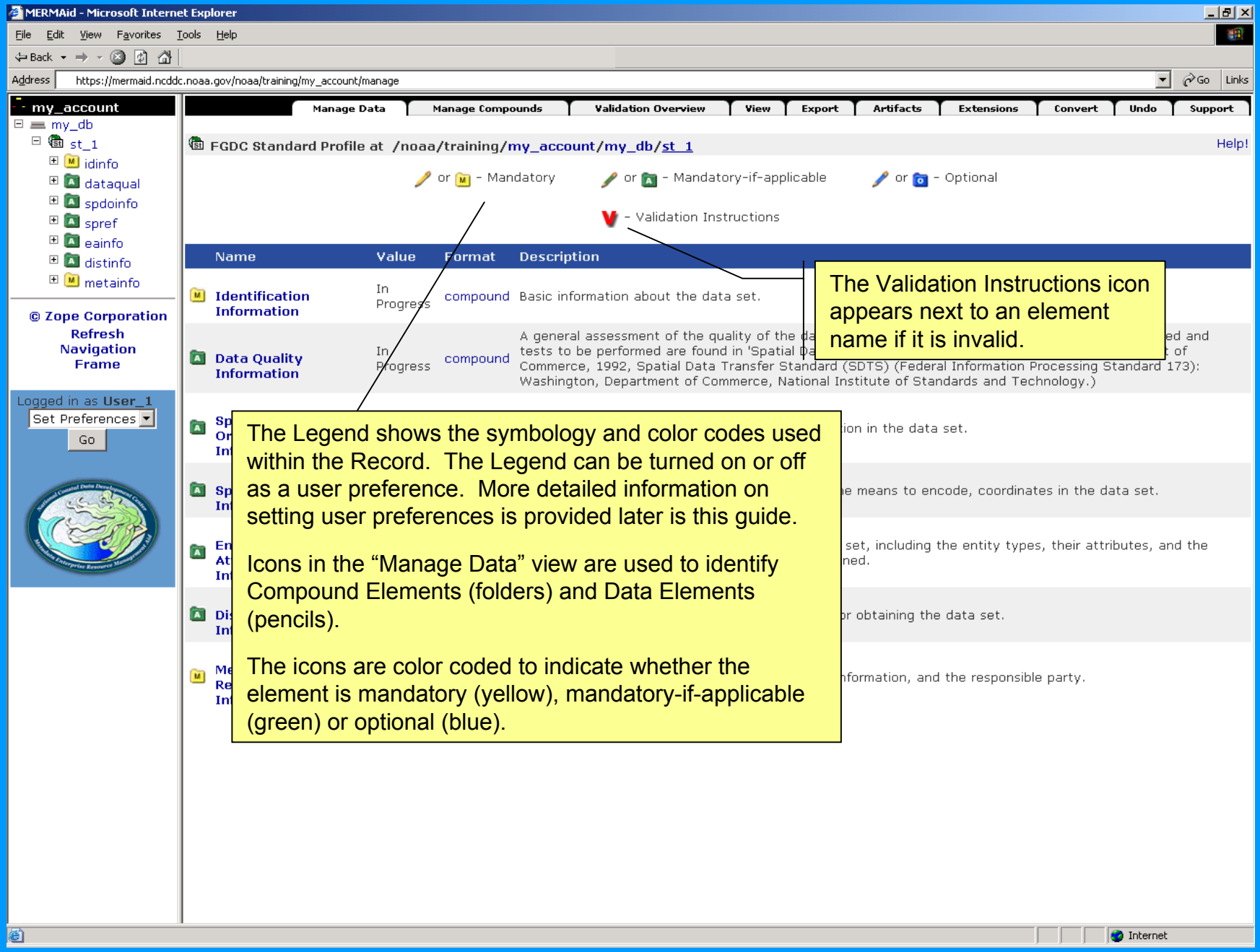
This example shows two transactions that can be undone.

To undo a transaction, select the checkbox(es) next to the item(s) that you want to undo and click on the “Undo” button.

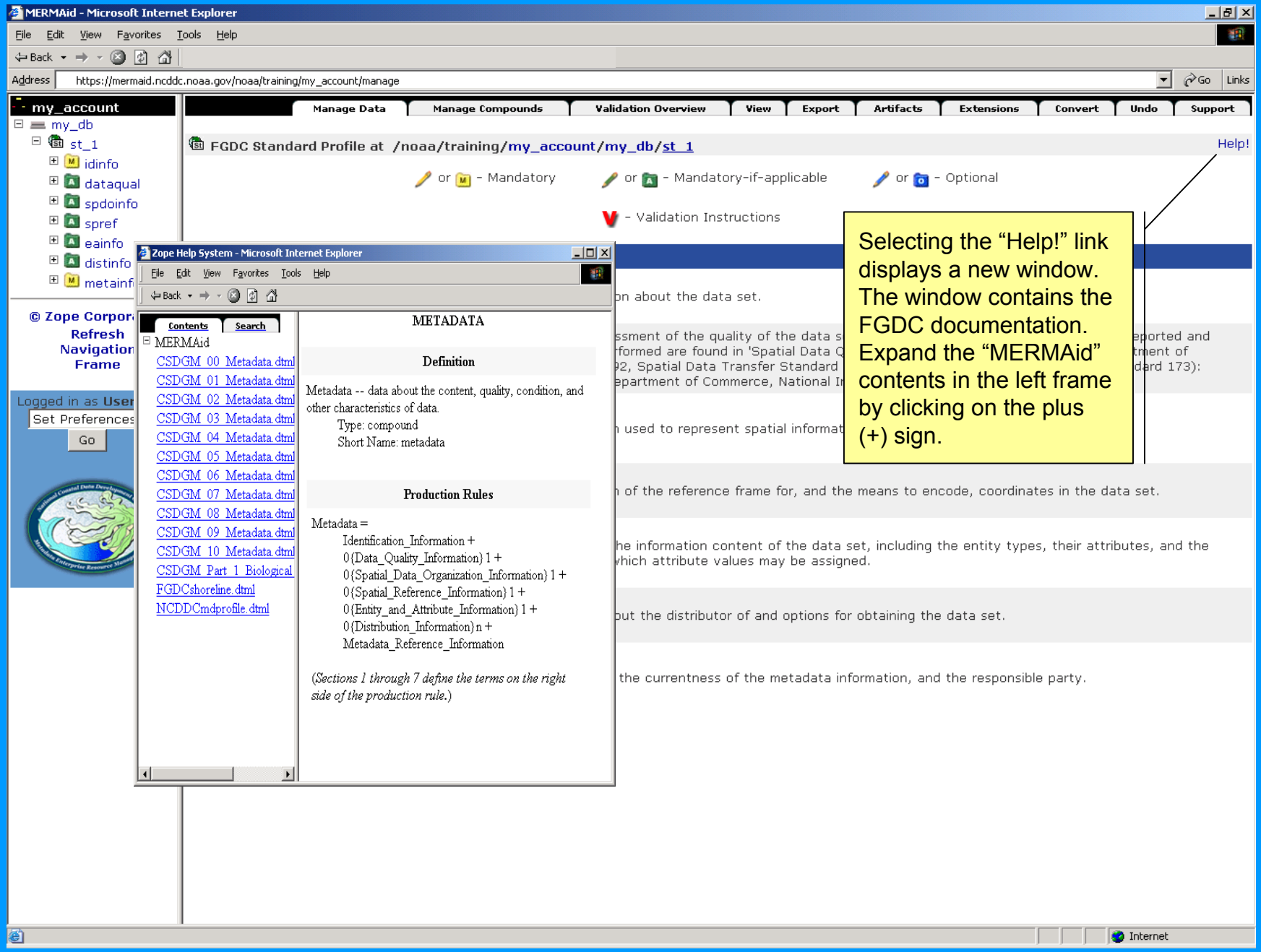
Metadata Record Environment – “Support” View



Metadata Record Environment – Legend

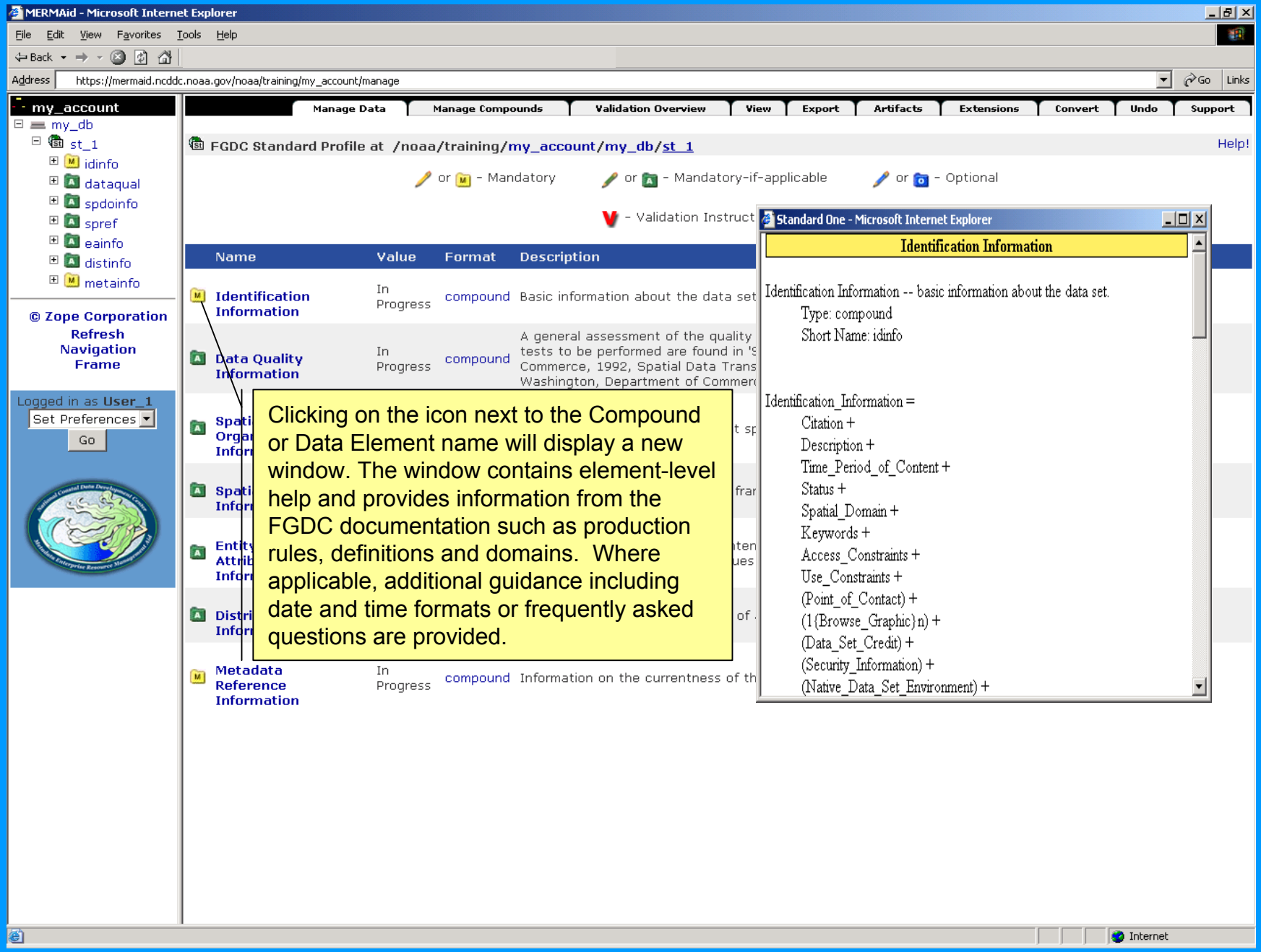


Metadata Record Environment – Help Features

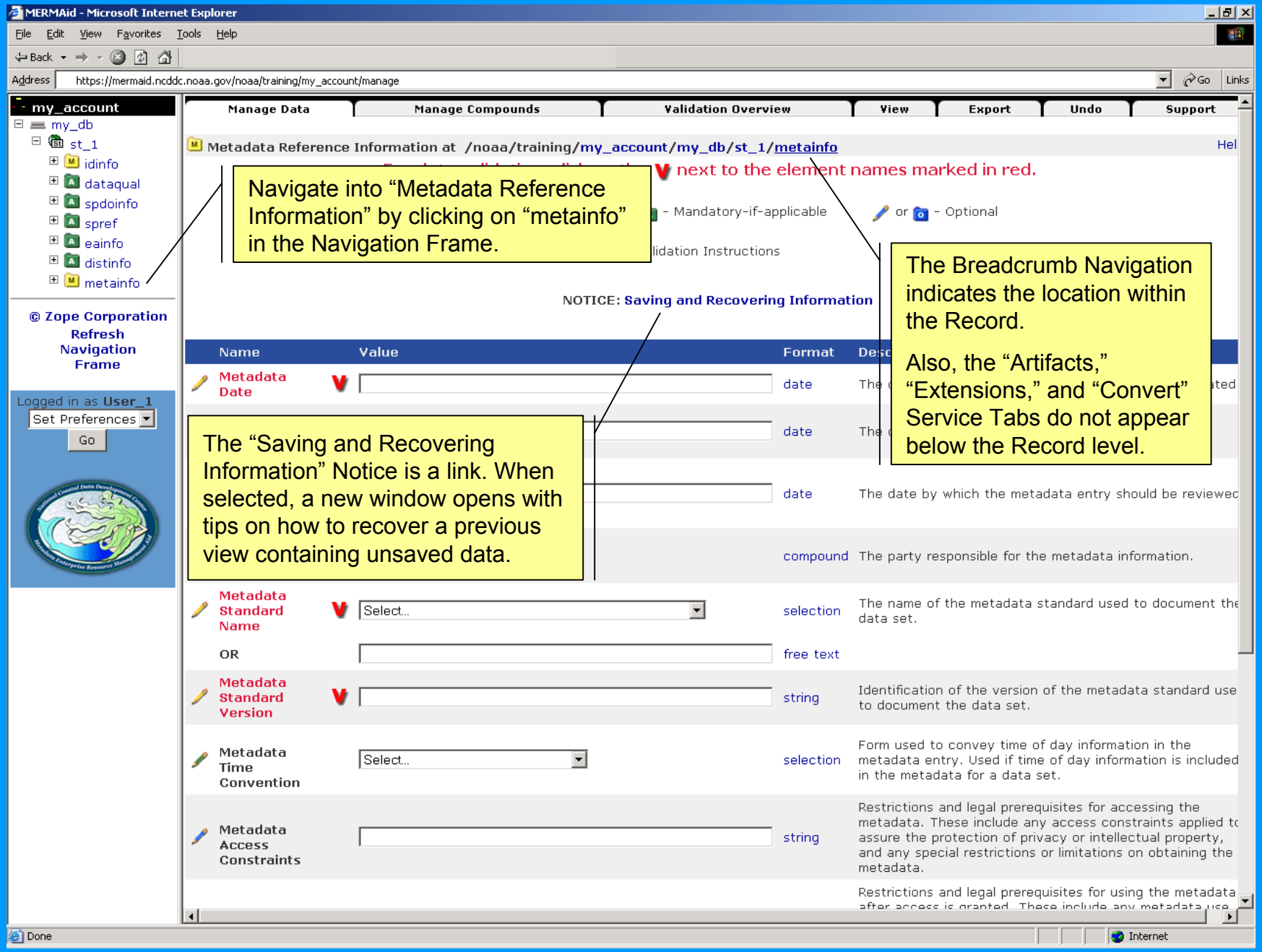


Selecting the "Help!" link displays a new window. The window contains the FGDC documentation. Expand the "MERMAid" contents in the left frame by clicking on the plus (+) sign.

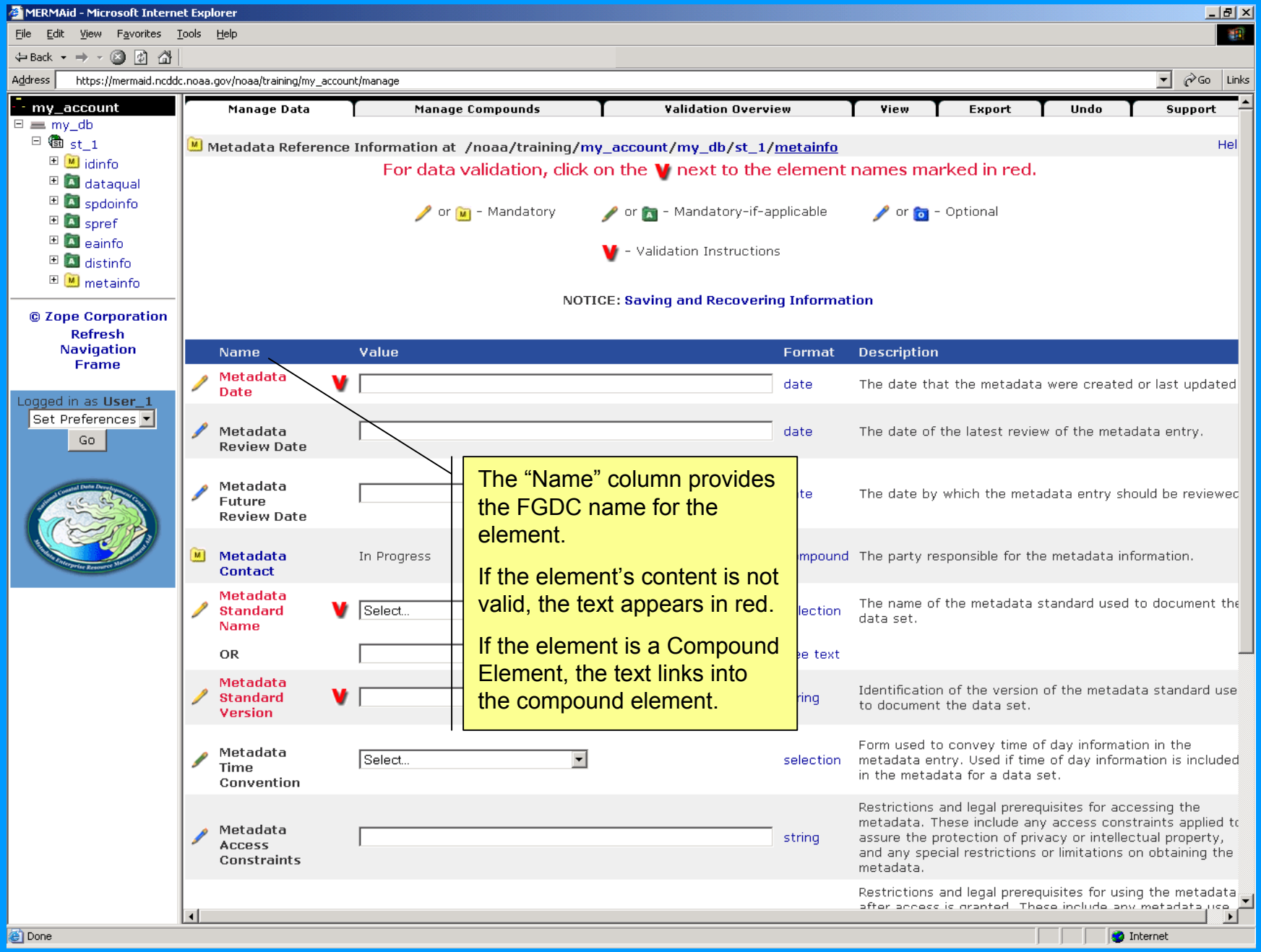
Metadata Record Environment – Help Features



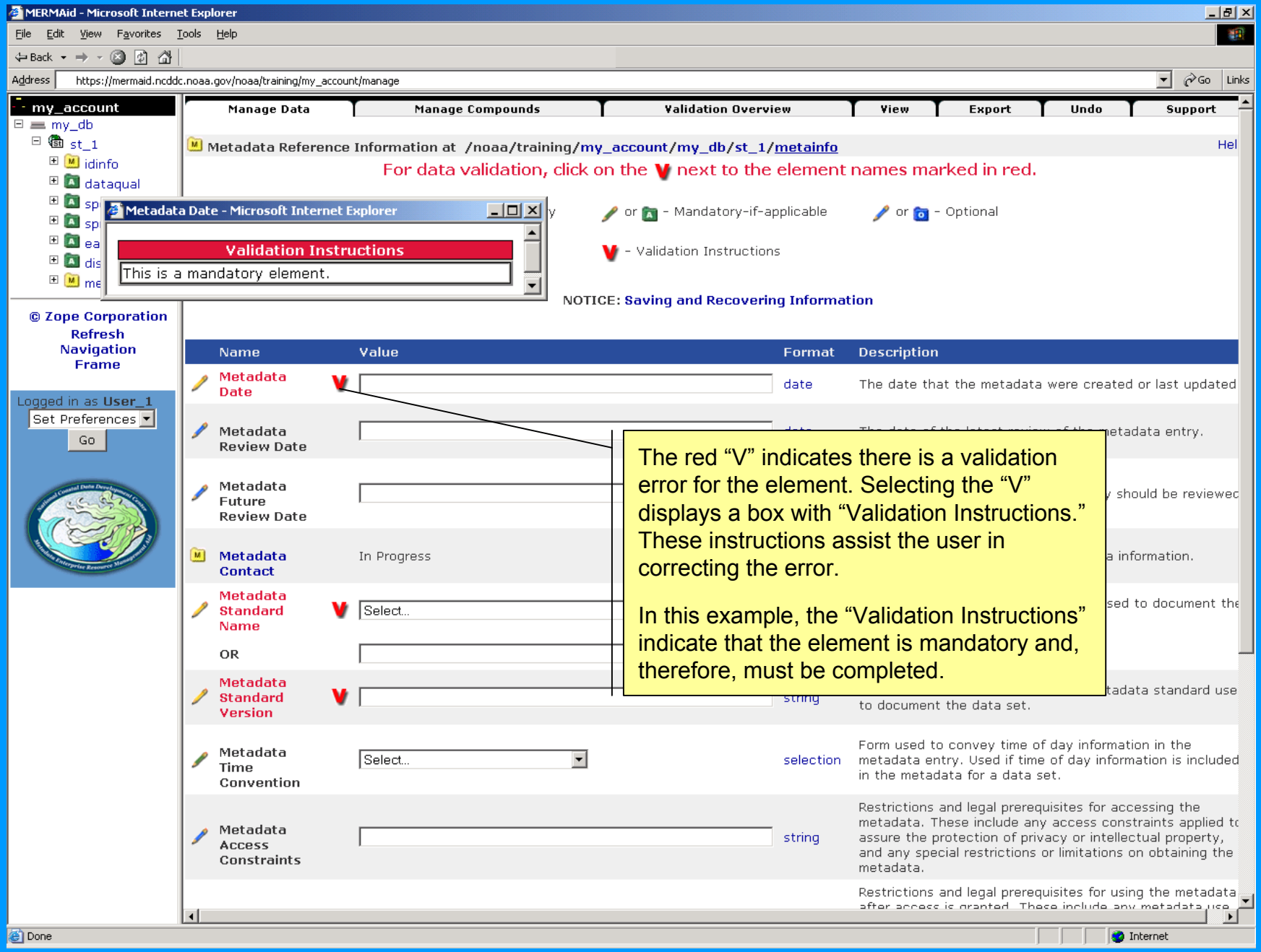
Metadata Record Environment – Help Features



Metadata Record Environment – “Name” Column



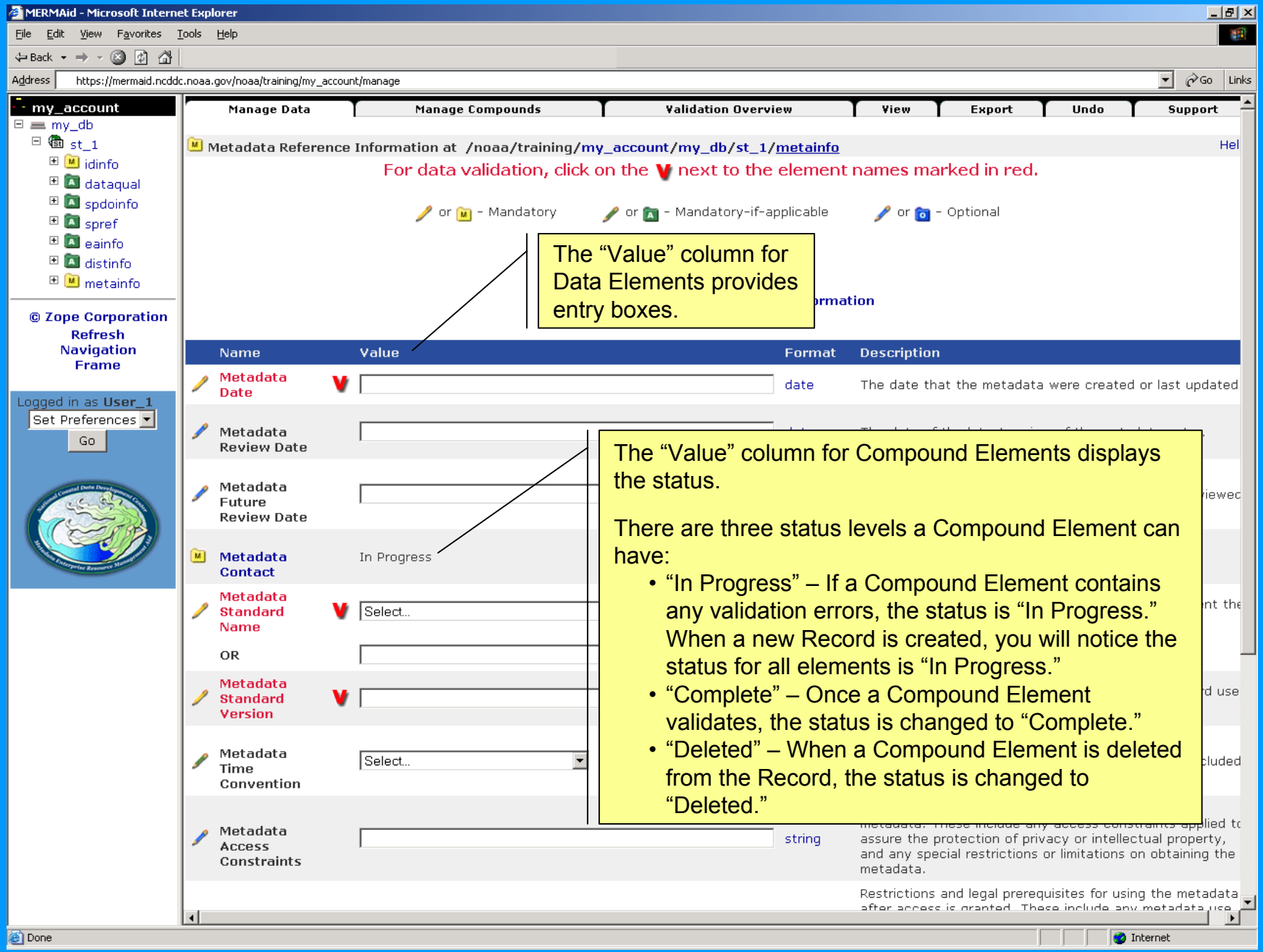
Metadata Record Environment – Validation Instructions



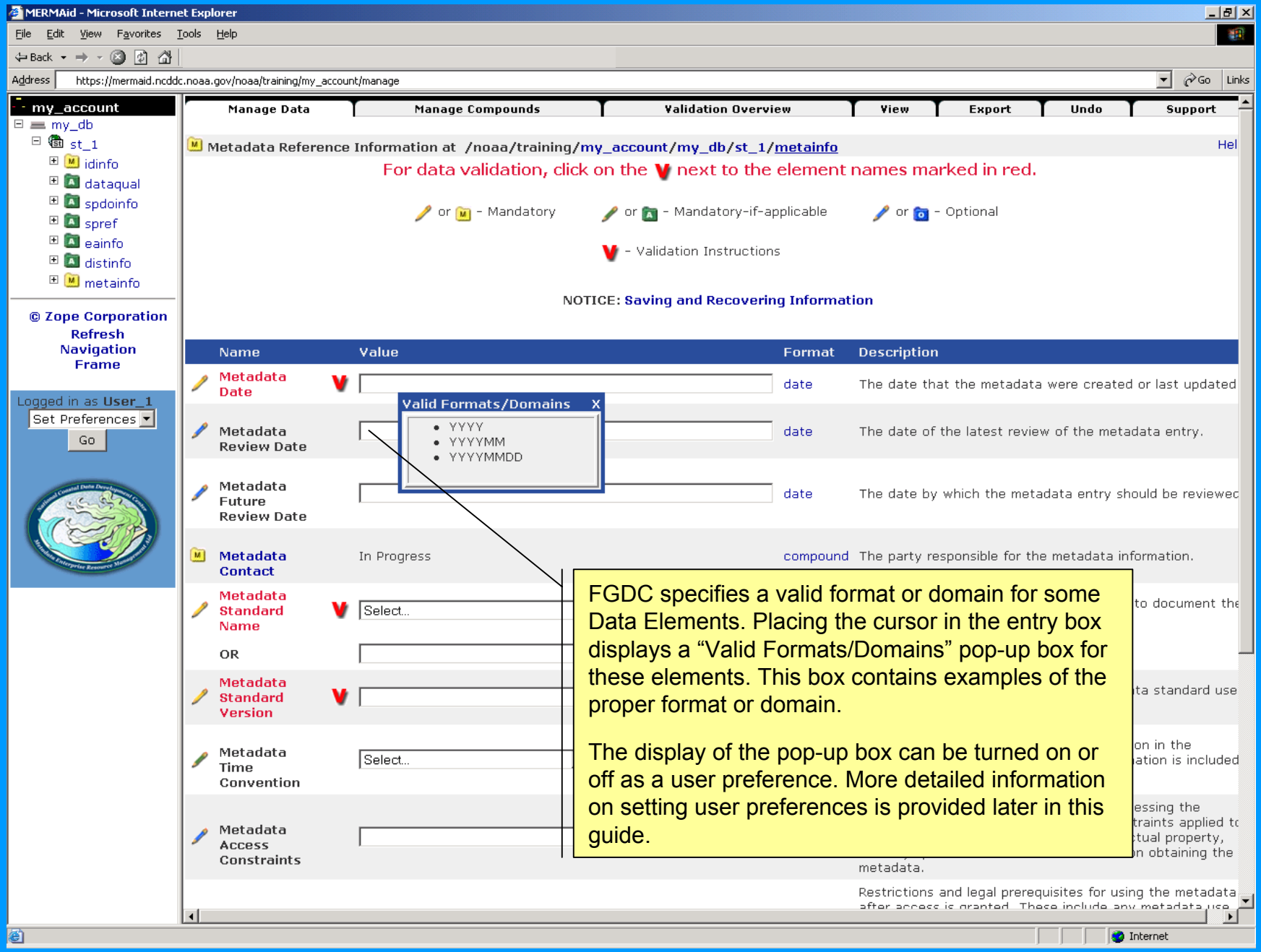
The red "V" indicates there is a validation error for the element. Selecting the "V" displays a box with "Validation Instructions." These instructions assist the user in correcting the error.

In this example, the "Validation Instructions" indicate that the element is mandatory and, therefore, must be completed.

Metadata Record Environment – "Value" Column



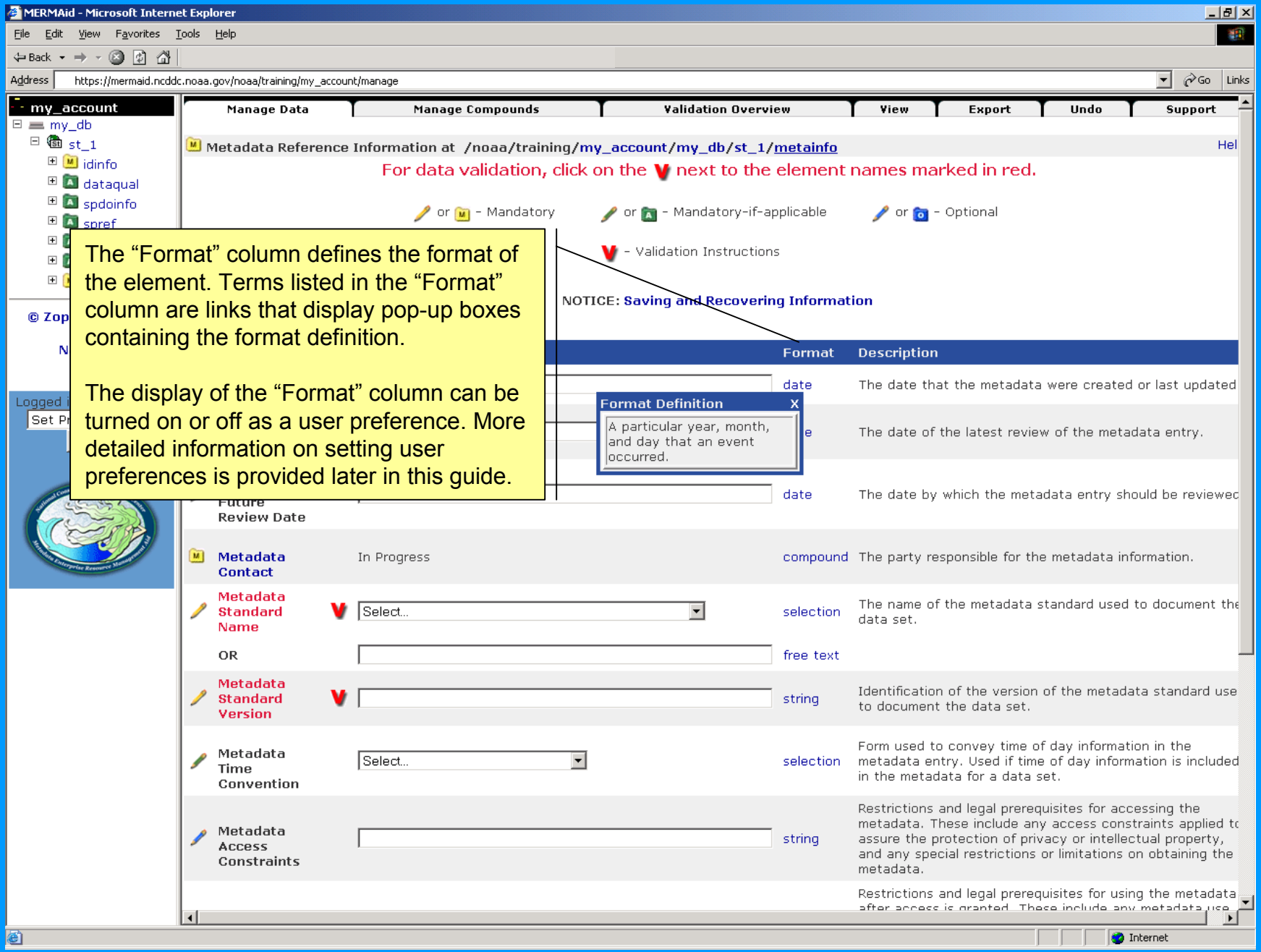
Metadata Record Environment – “Valid Formats/Domains”



FGDC specifies a valid format or domain for some Data Elements. Placing the cursor in the entry box displays a “Valid Formats/Domains” pop-up box for these elements. This box contains examples of the proper format or domain.

The display of the pop-up box can be turned on or off as a user preference. More detailed information on setting user preferences is provided later in this guide.

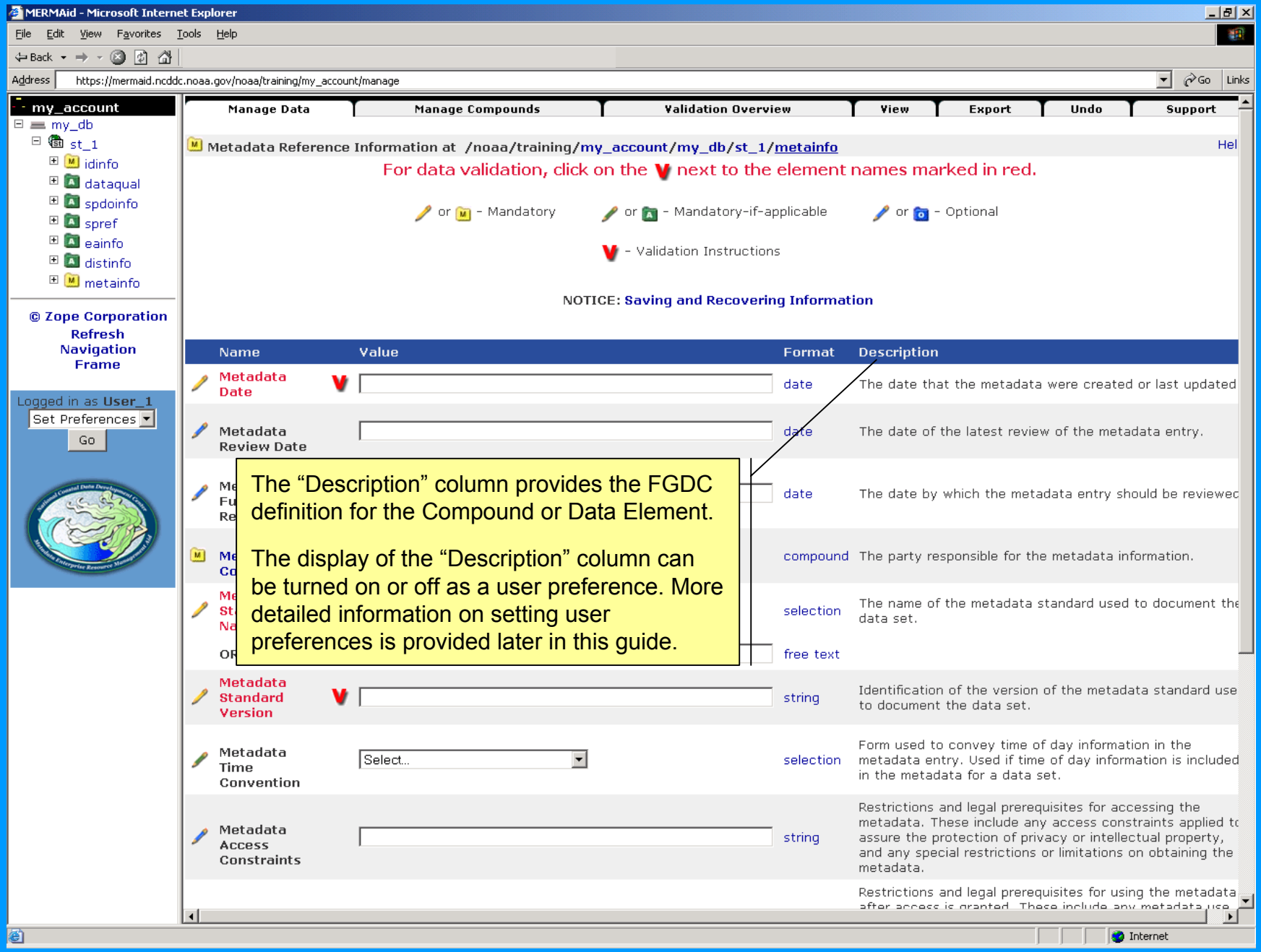
Metadata Record Environment – “Format” Column



The “Format” column defines the format of the element. Terms listed in the “Format” column are links that display pop-up boxes containing the format definition.

The display of the “Format” column can be turned on or off as a user preference. More detailed information on setting user preferences is provided later in this guide.

Metadata Record Environment – “Description” Column



The “Description” column provides the FGDC definition for the Compound or Data Element.

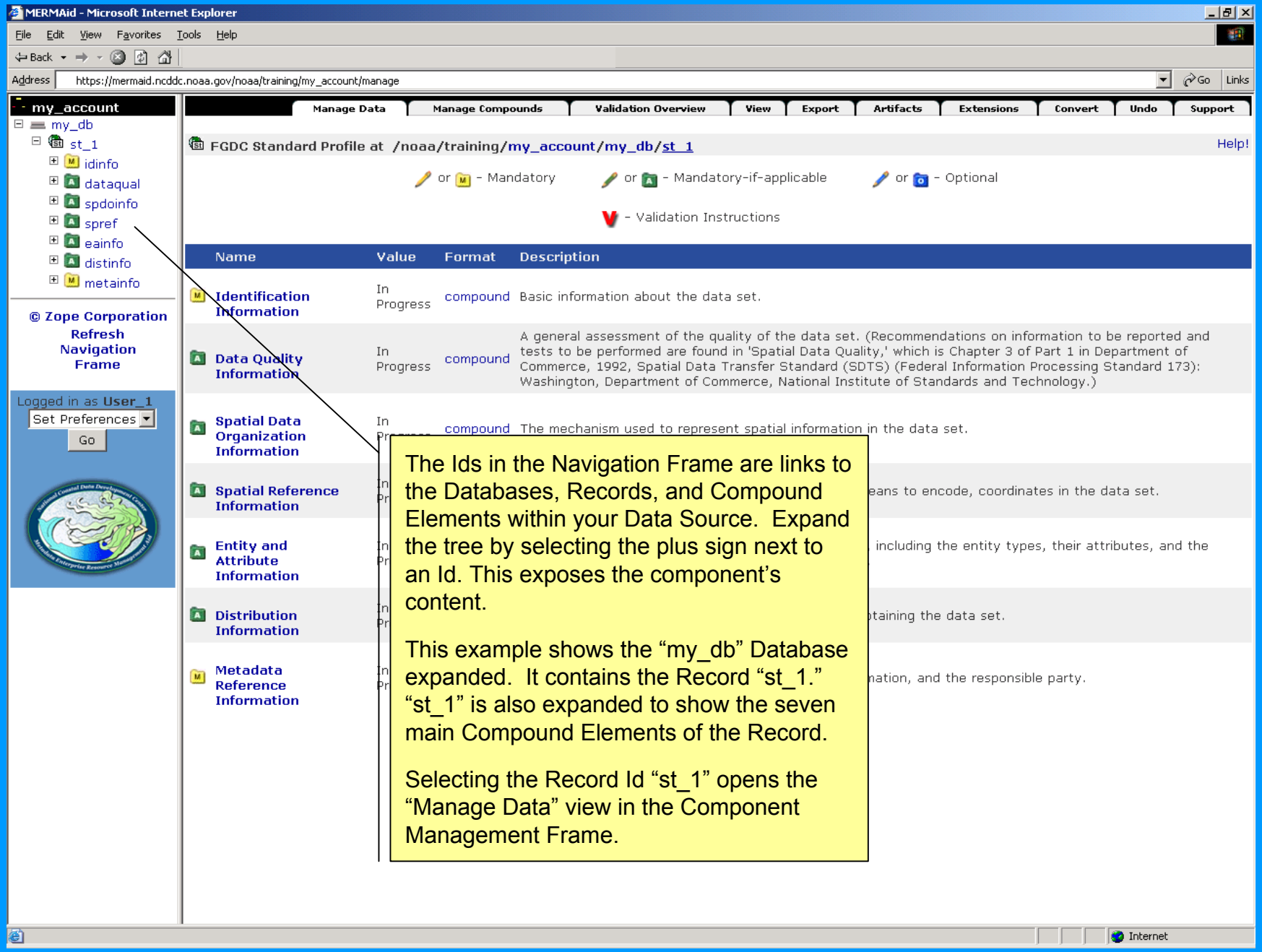
The display of the “Description” column can be turned on or off as a user preference. More detailed information on setting user preferences is provided later in this guide.

Navigating through MERMAid

Navigation within a Record can occur in three different ways:

- The Navigation Frame
- The “Manage Data” view
- The Breadcrumb Navigation

Navigating through MERMAid – Navigation Frame

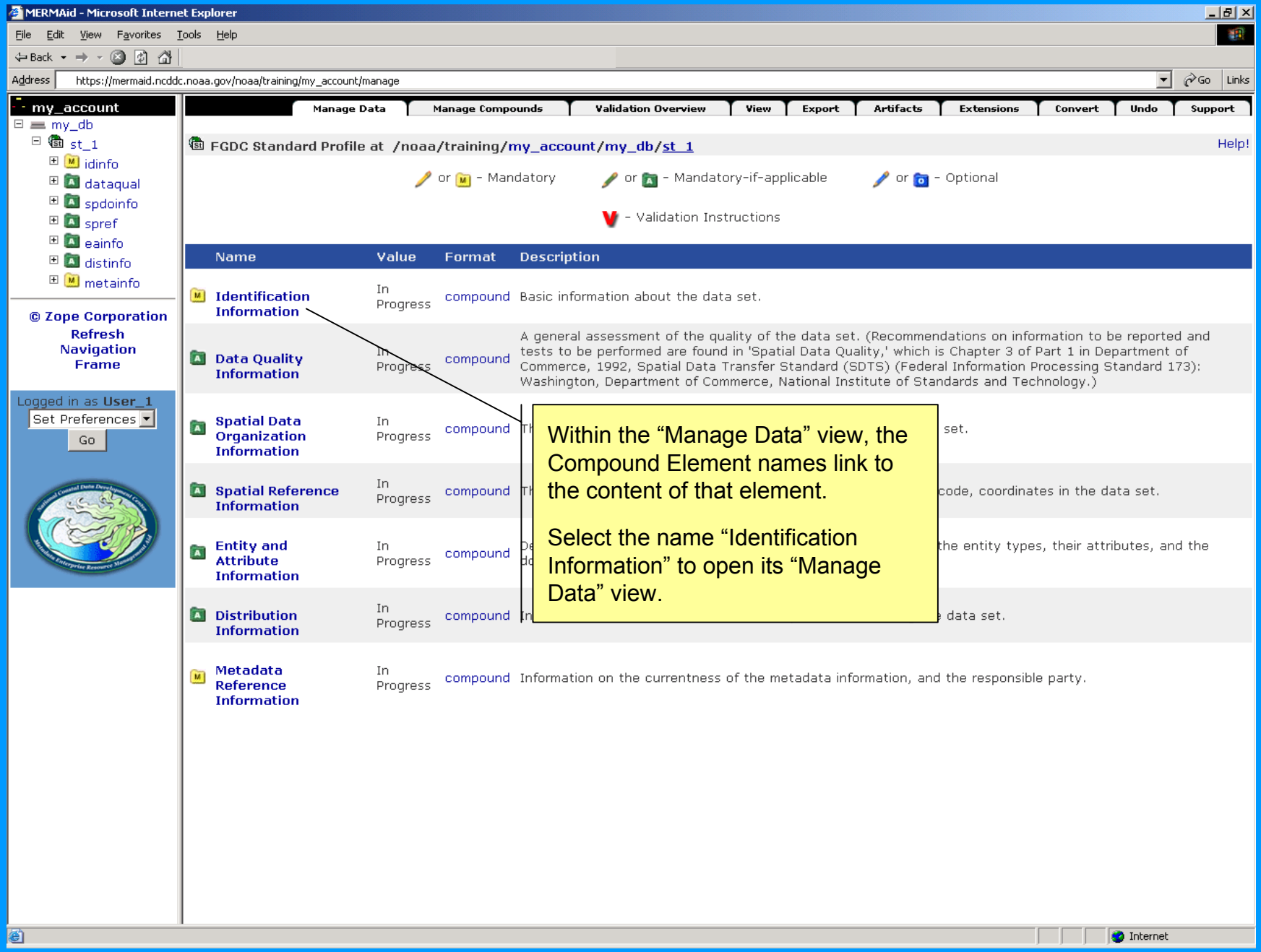


The Ids in the Navigation Frame are links to the Databases, Records, and Compound Elements within your Data Source. Expand the tree by selecting the plus sign next to an Id. This exposes the component's content.

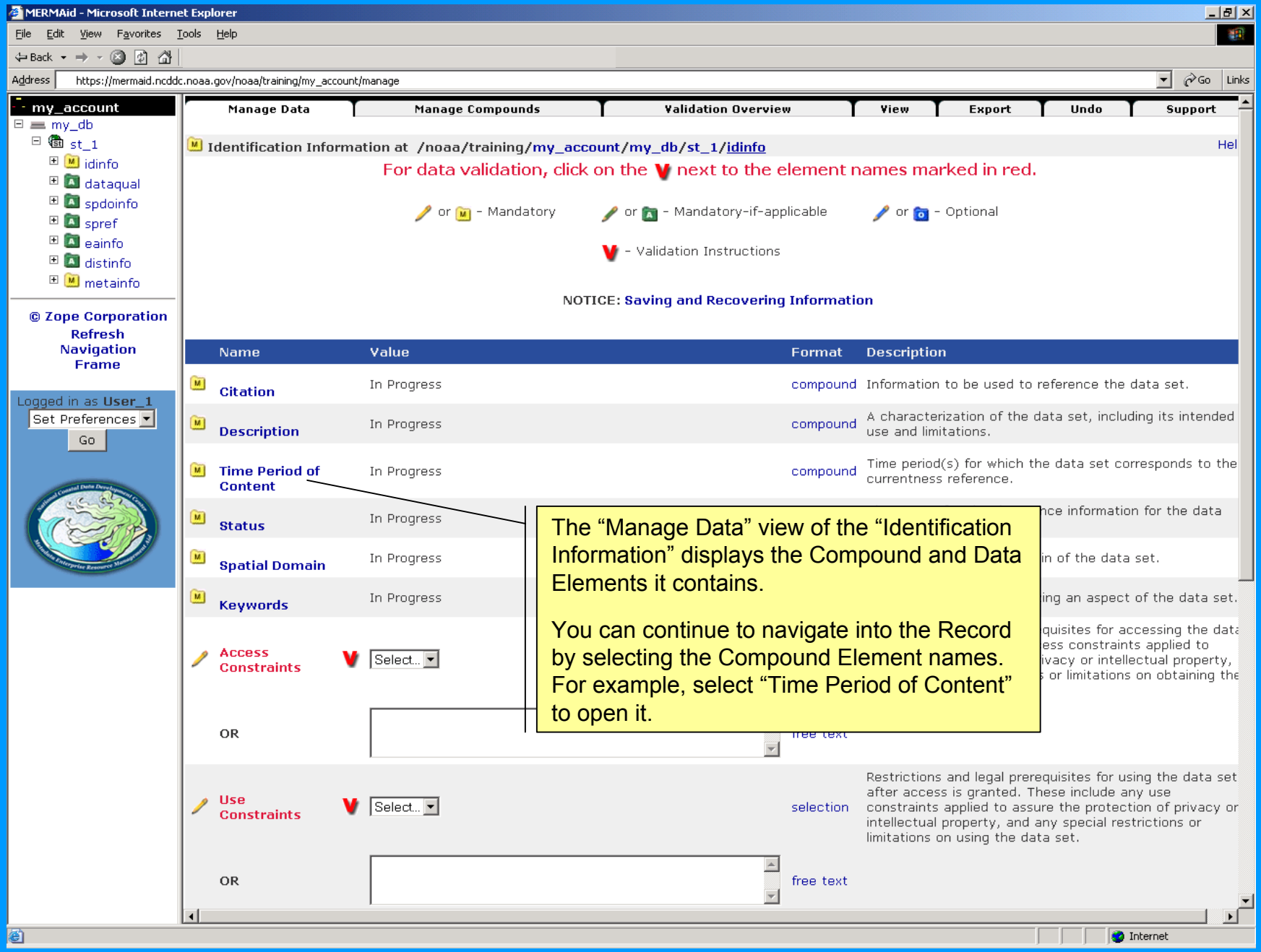
This example shows the "my_db" Database expanded. It contains the Record "st_1." "st_1" is also expanded to show the seven main Compound Elements of the Record.

Selecting the Record Id "st_1" opens the "Manage Data" view in the Component Management Frame.

Navigating through MERMAid – “Manage Data” View



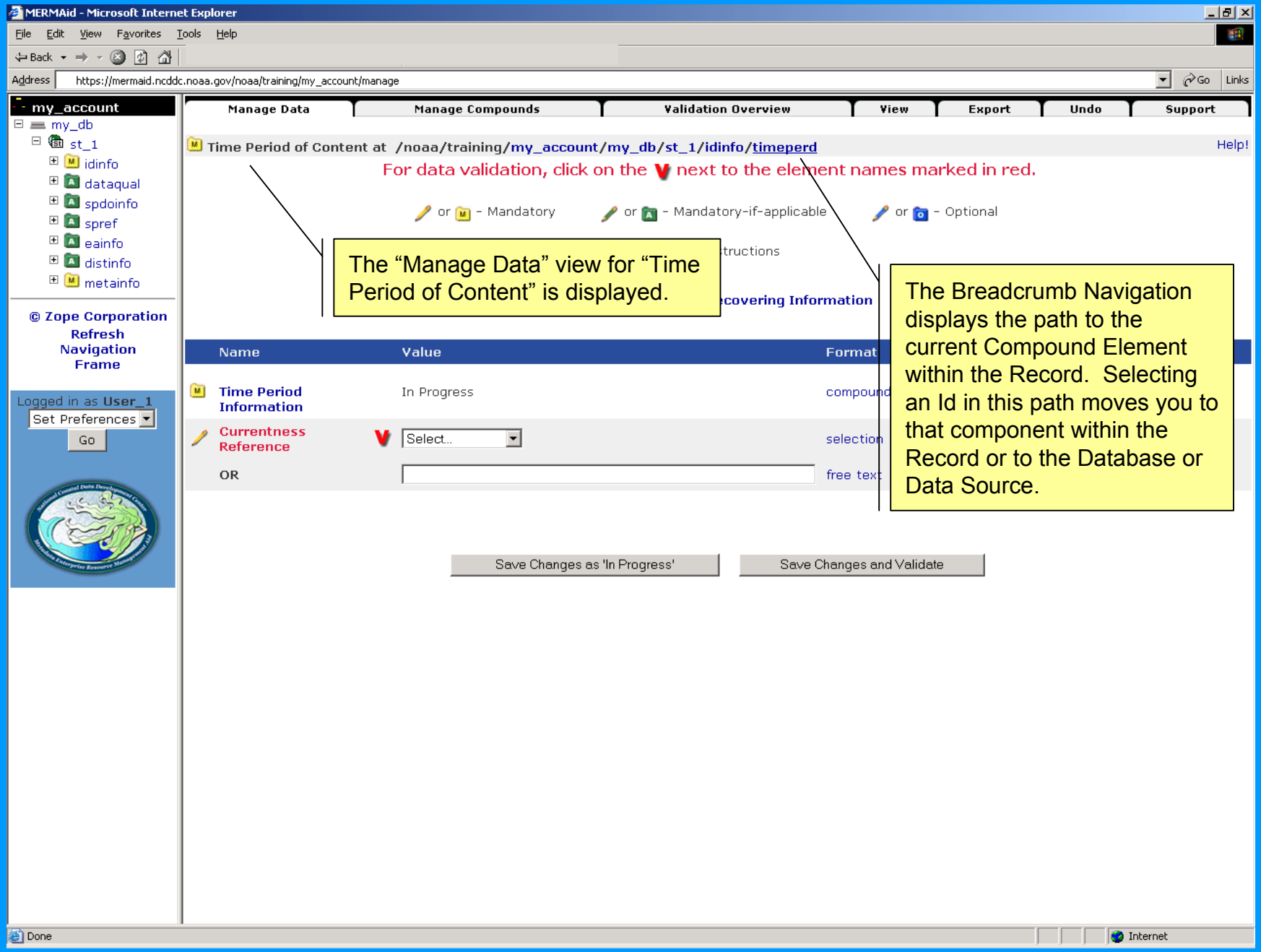
Navigating through MERMAid – "Manage Data" View



The "Manage Data" view of the "Identification Information" displays the Compound and Data Elements it contains.

You can continue to navigate into the Record by selecting the Compound Element names. For example, select "Time Period of Content" to open it.

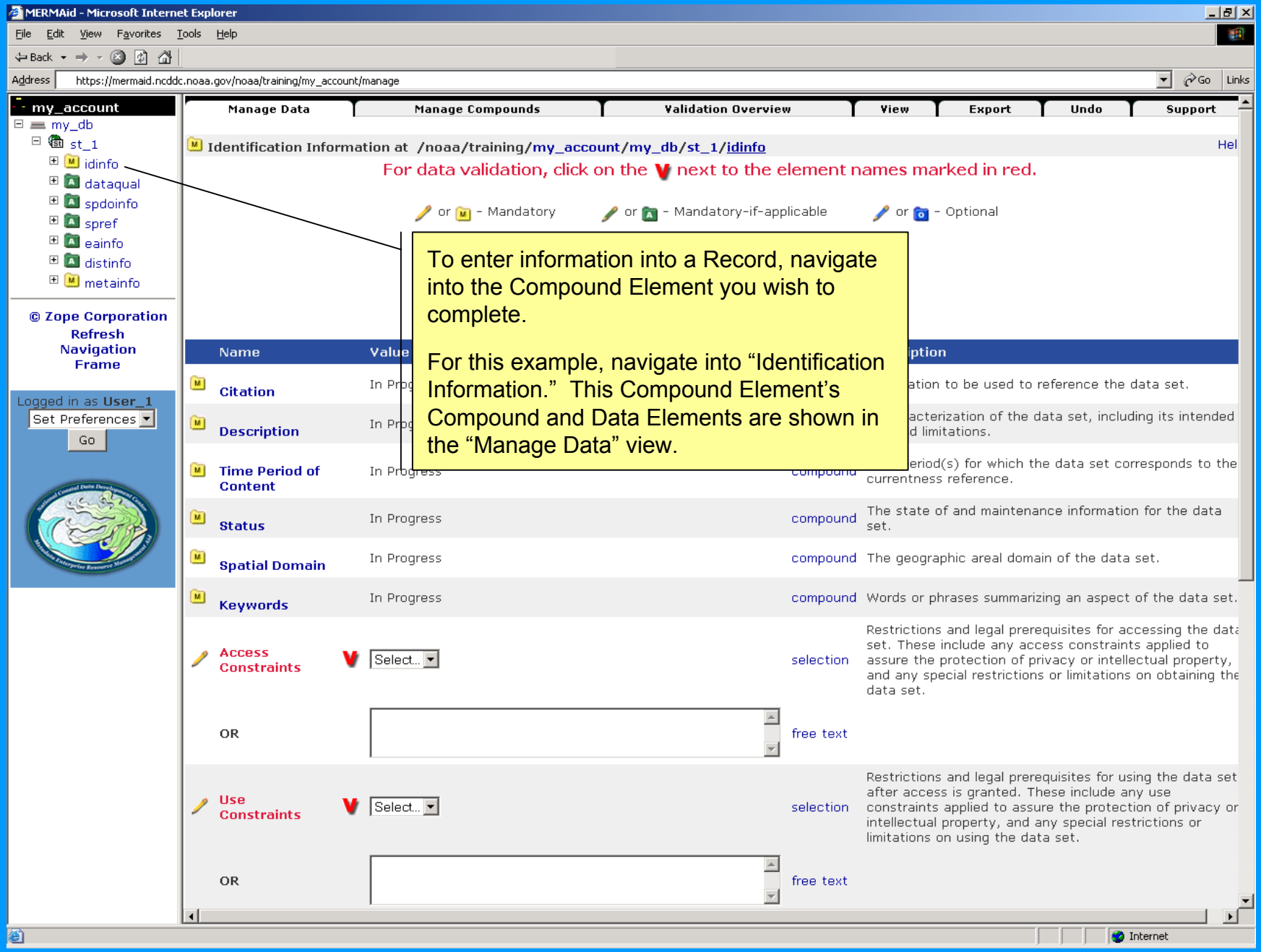
Navigating through MERMAid – Breadcrumb Navigation



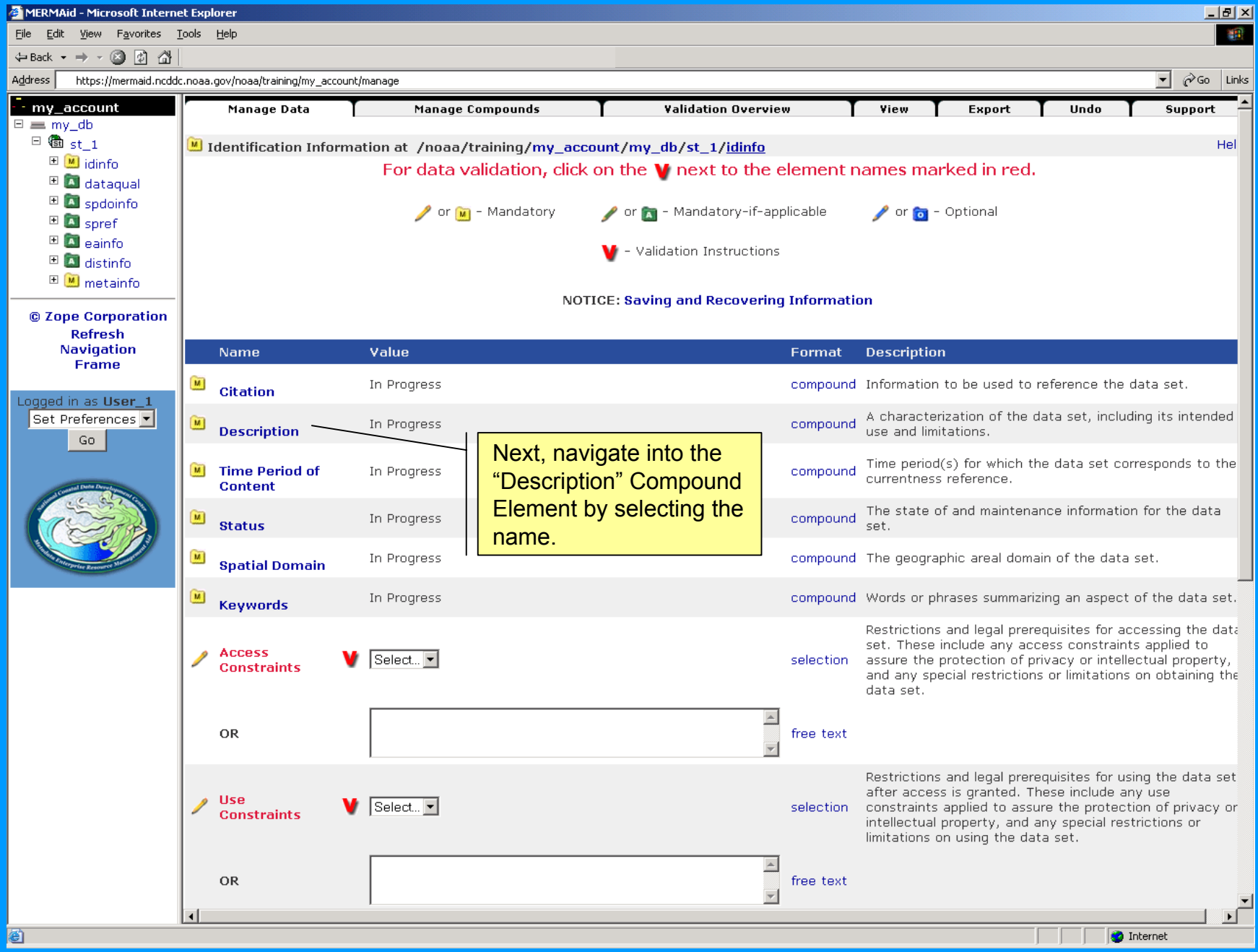
The "Manage Data" view for "Time Period of Content" is displayed.

The Breadcrumb Navigation displays the path to the current Compound Element within the Record. Selecting an Id in this path moves you to that component within the Record or to the Database or Data Source.

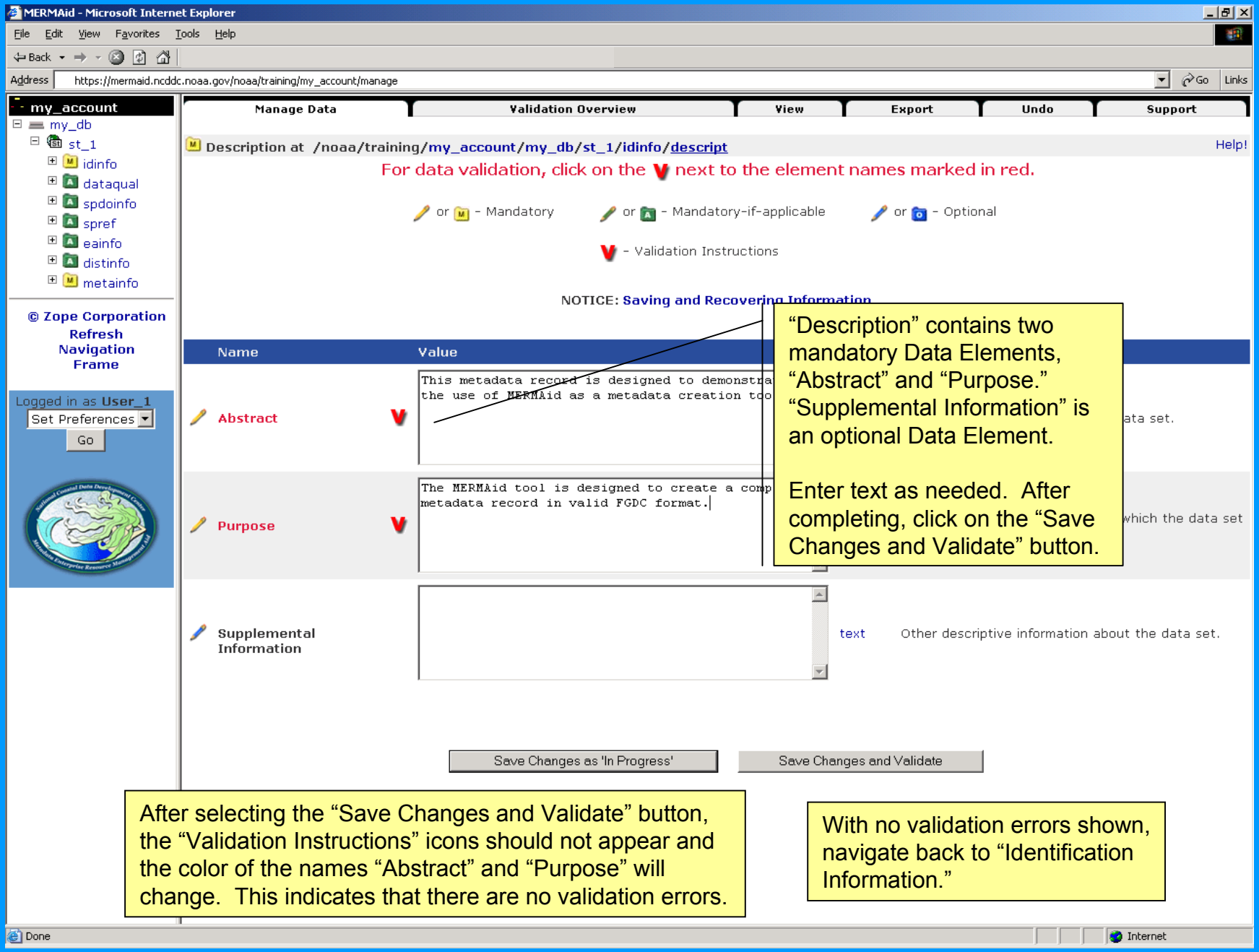
Entering and Validating Information



Entering and Validating Information



Entering and Validating Information



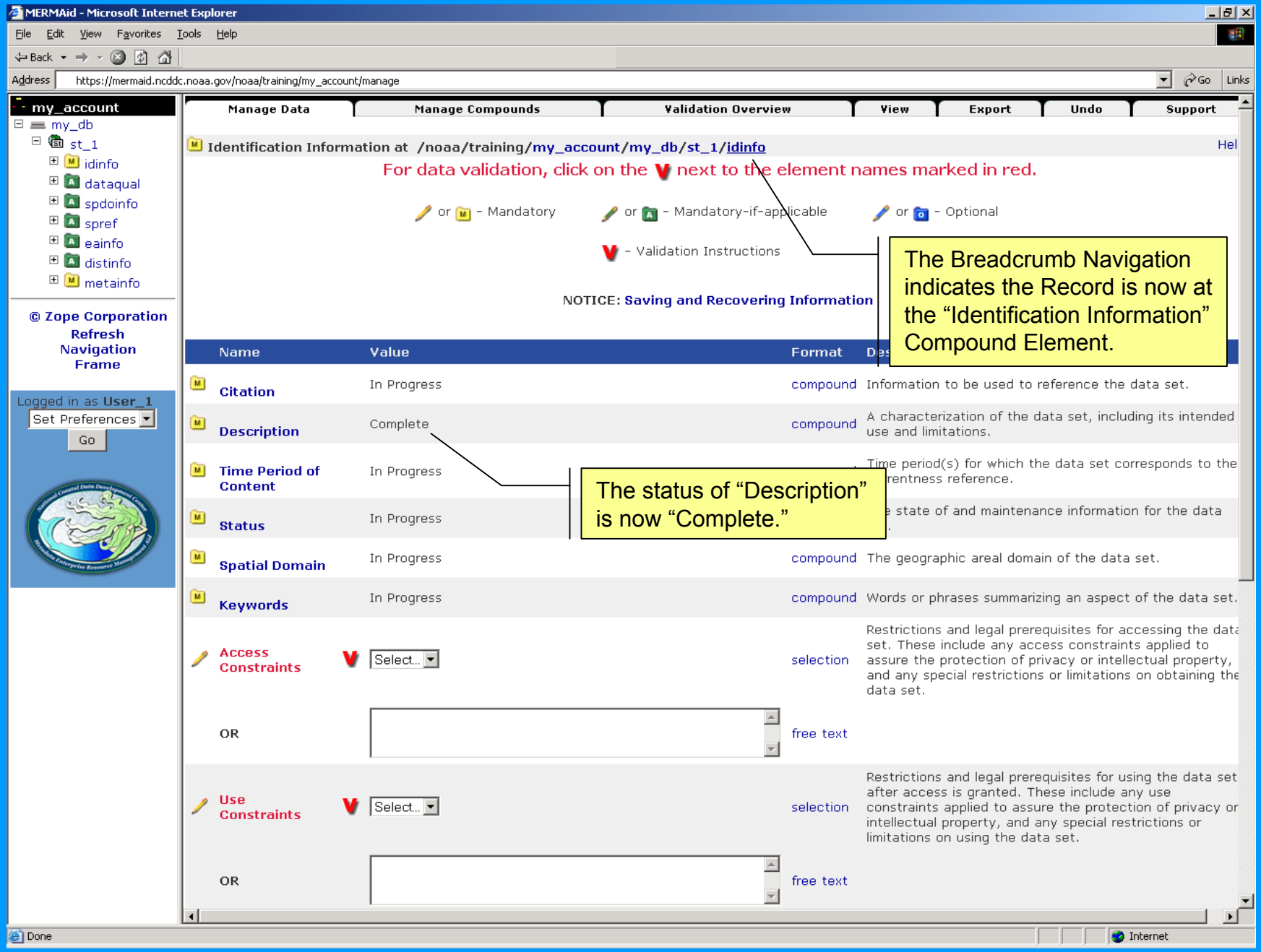
"Description" contains two mandatory Data Elements, "Abstract" and "Purpose." "Supplemental Information" is an optional Data Element.

Enter text as needed. After completing, click on the "Save Changes and Validate" button.

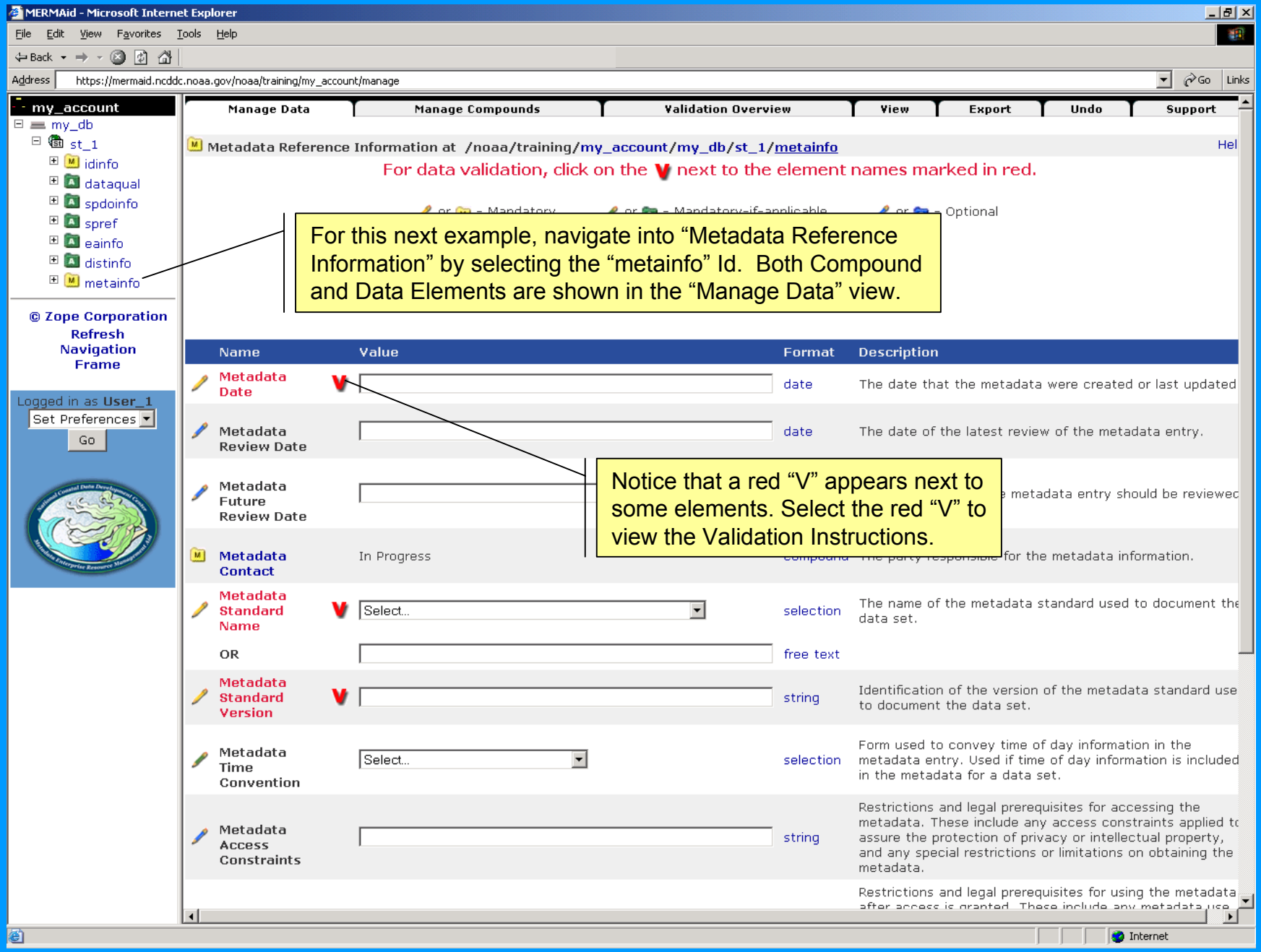
After selecting the "Save Changes and Validate" button, the "Validation Instructions" icons should not appear and the color of the names "Abstract" and "Purpose" will change. This indicates that there are no validation errors.

With no validation errors shown, navigate back to "Identification Information."

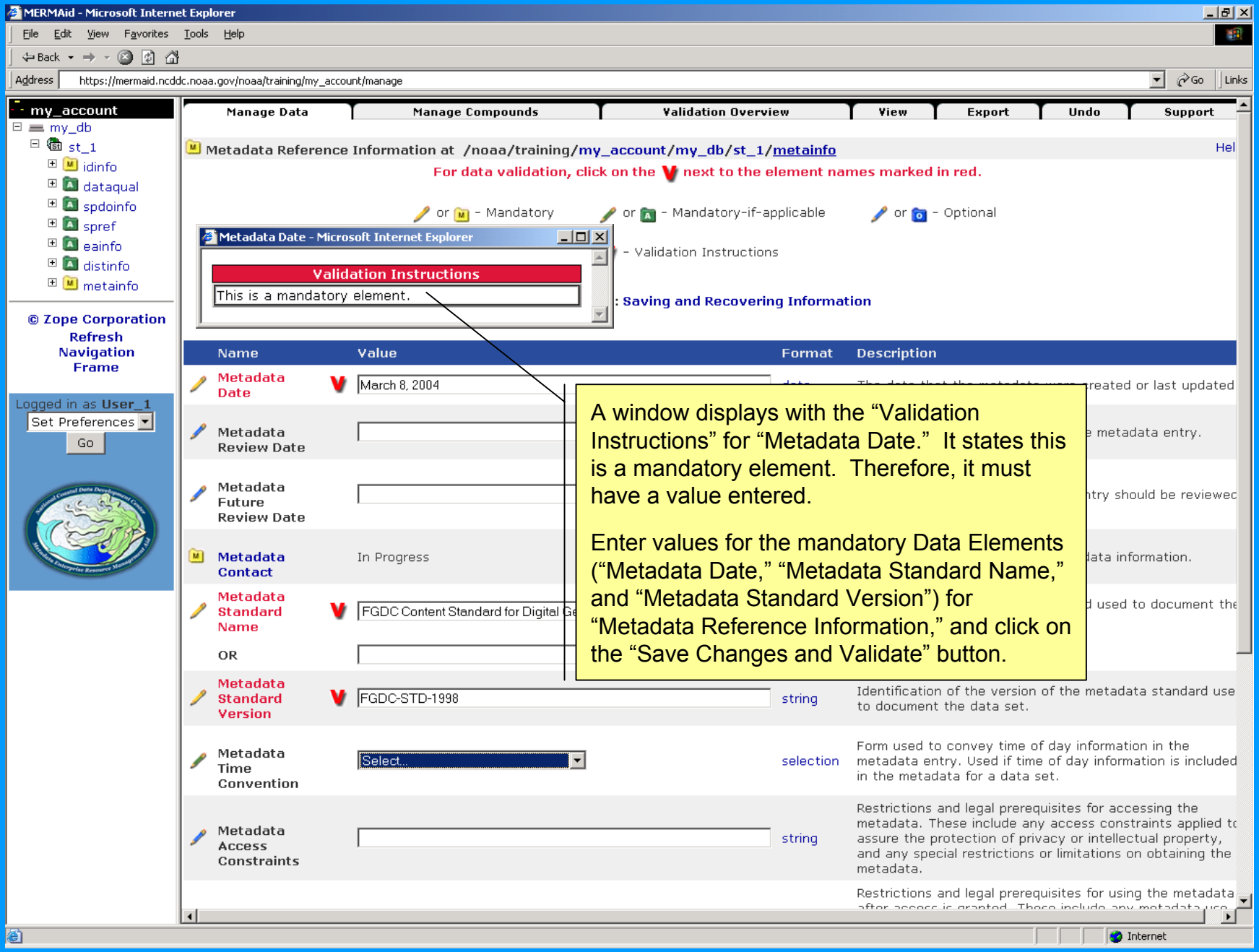
Entering and Validating Information



Entering and Validating Information



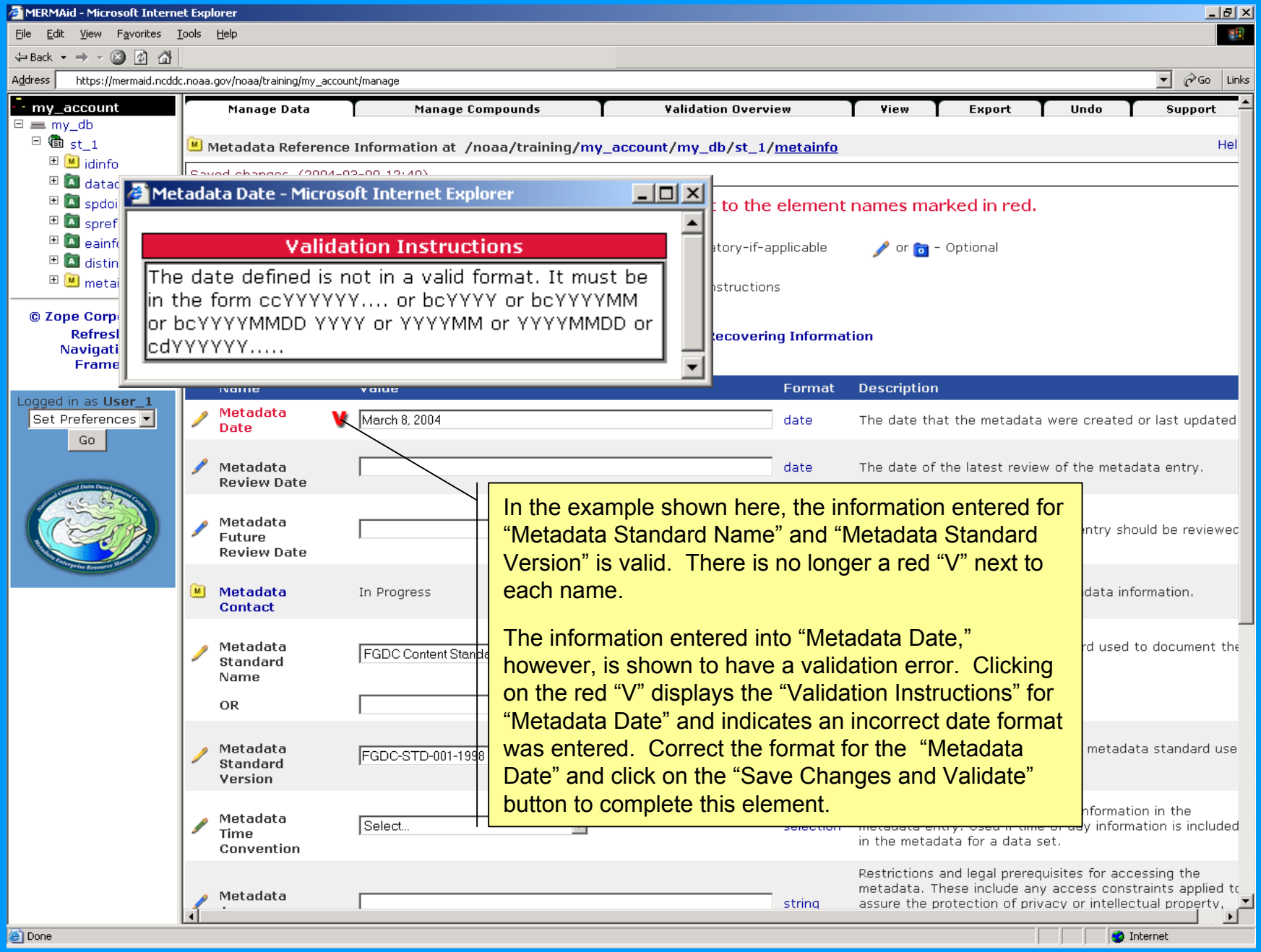
Entering and Validating Information



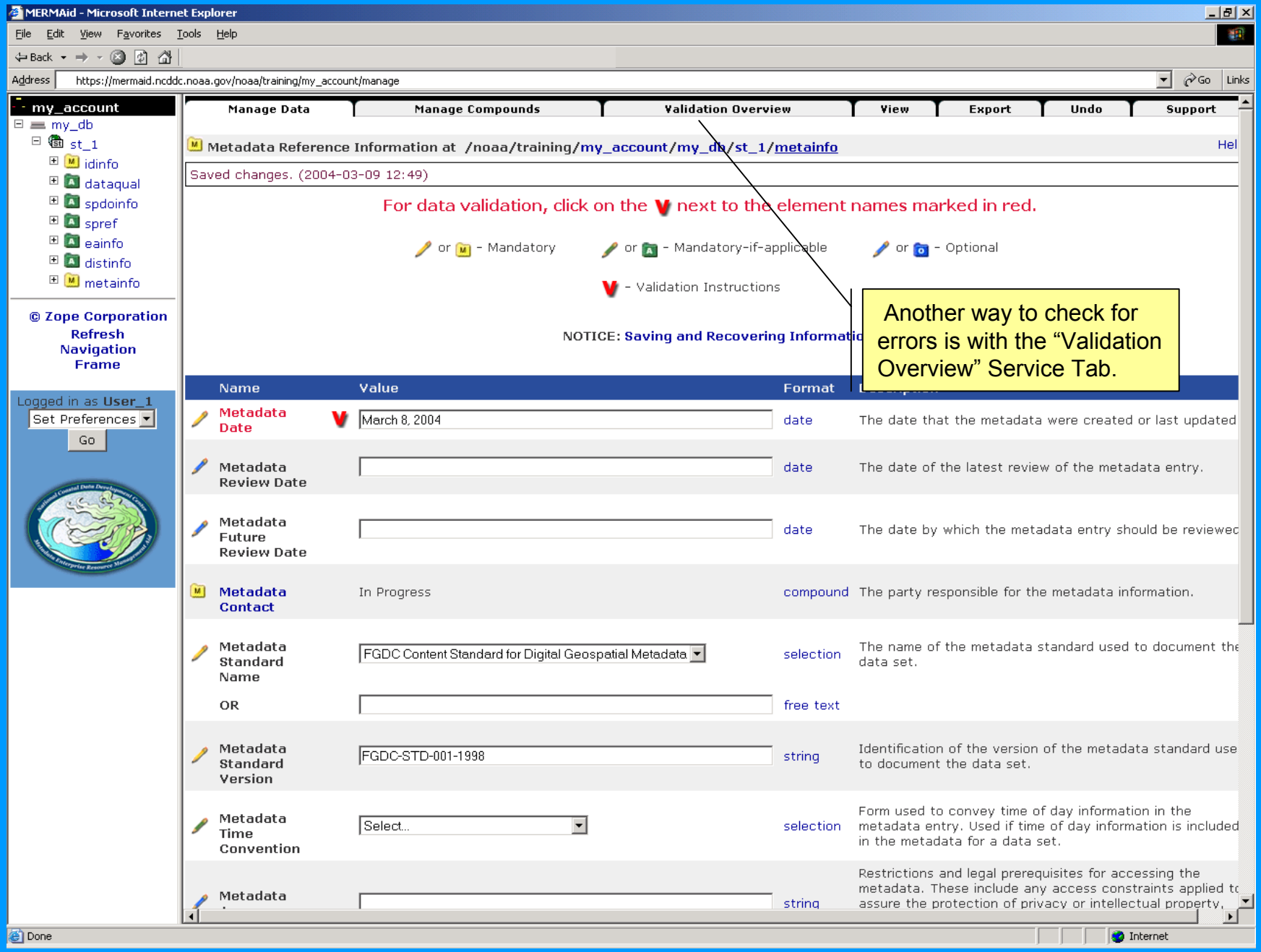
A window displays with the “Validation Instructions” for “Metadata Date.” It states this is a mandatory element. Therefore, it must have a value entered.

Enter values for the mandatory Data Elements (“Metadata Date,” “Metadata Standard Name,” and “Metadata Standard Version”) for “Metadata Reference Information,” and click on the “Save Changes and Validate” button.

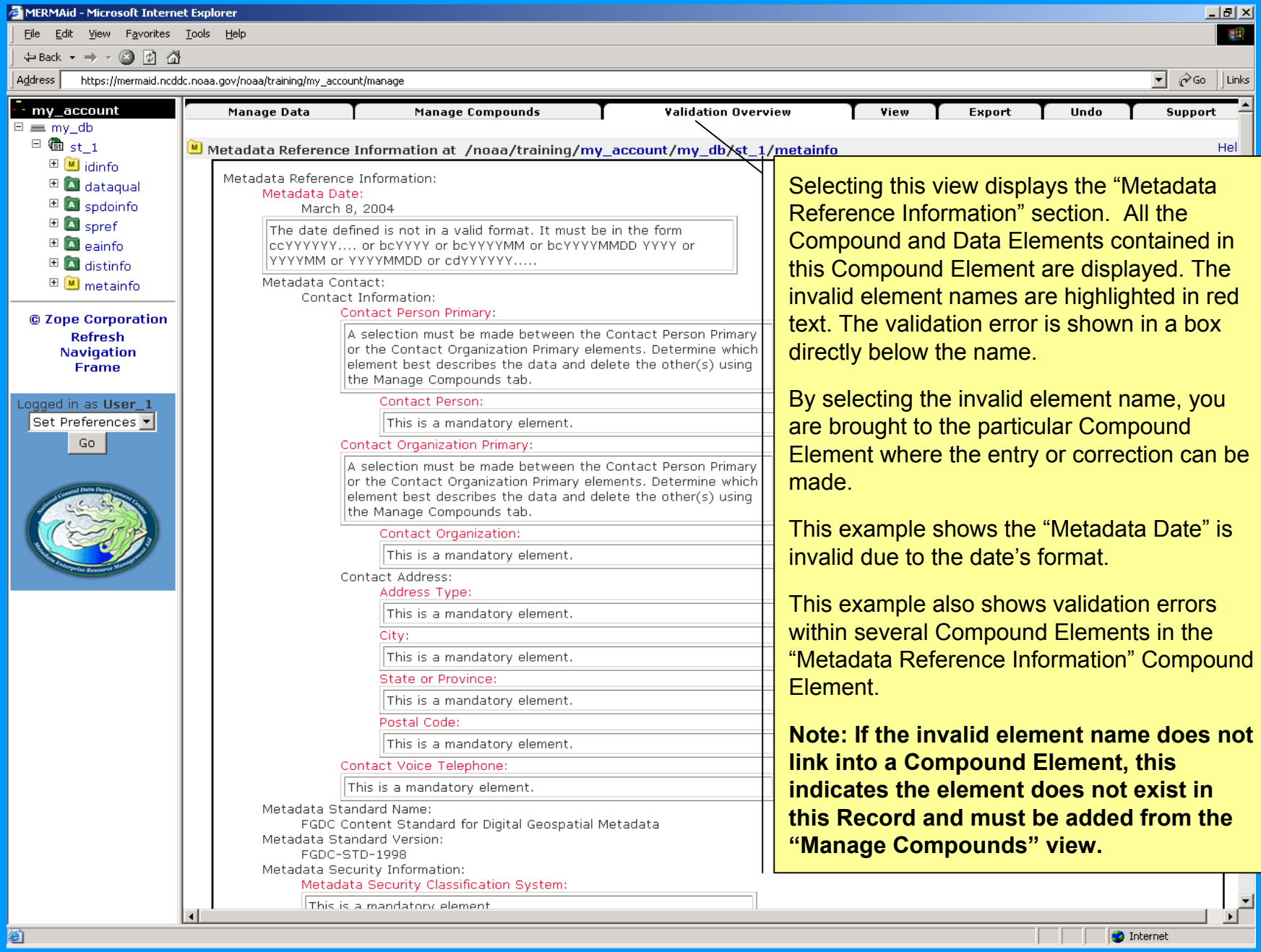
Entering and Validating Information



Entering and Validating Information



Entering and Validating Information



Selecting this view displays the “Metadata Reference Information” section. All the Compound and Data Elements contained in this Compound Element are displayed. The invalid element names are highlighted in red text. The validation error is shown in a box directly below the name.

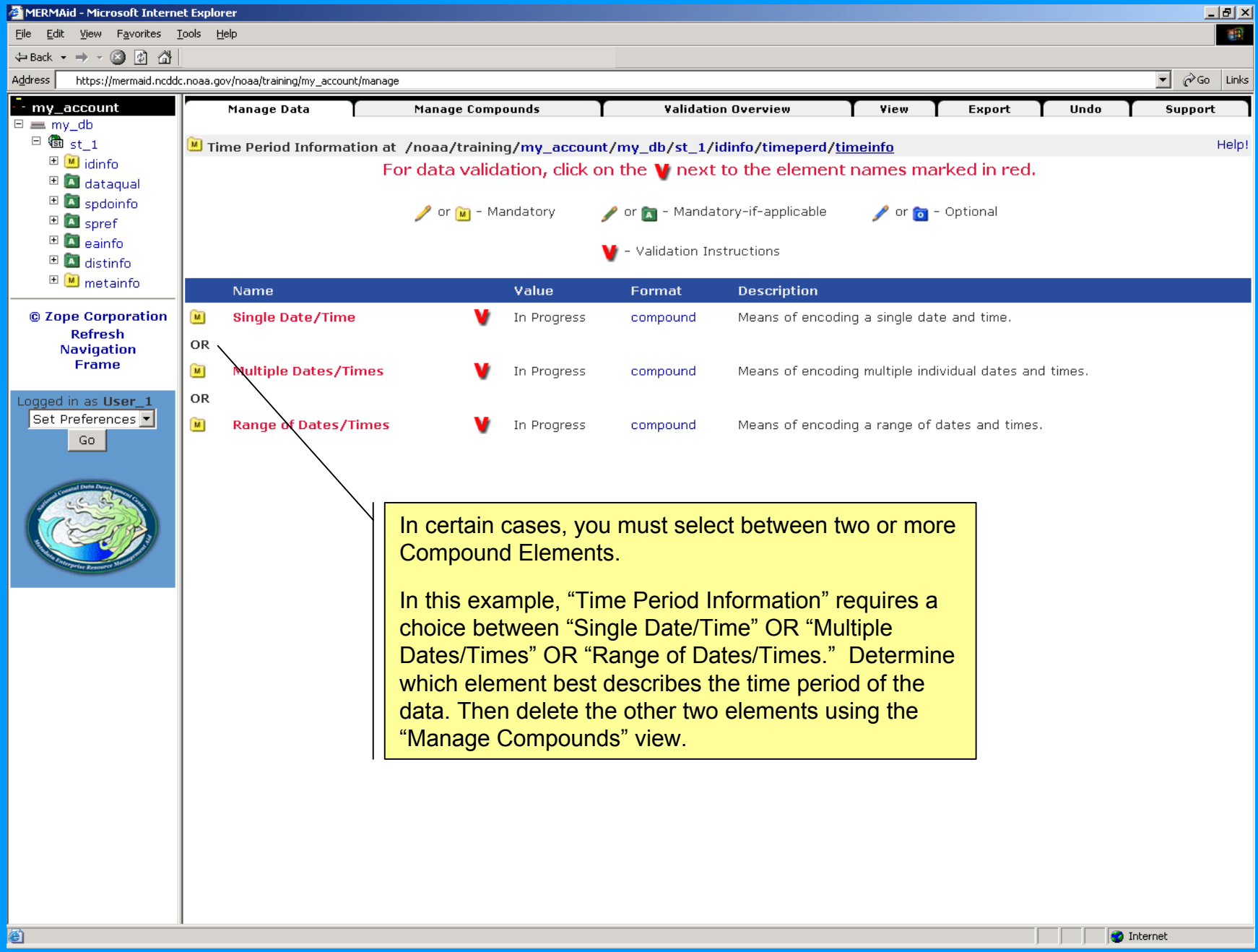
By selecting the invalid element name, you are brought to the particular Compound Element where the entry or correction can be made.

This example shows the “Metadata Date” is invalid due to the date’s format.

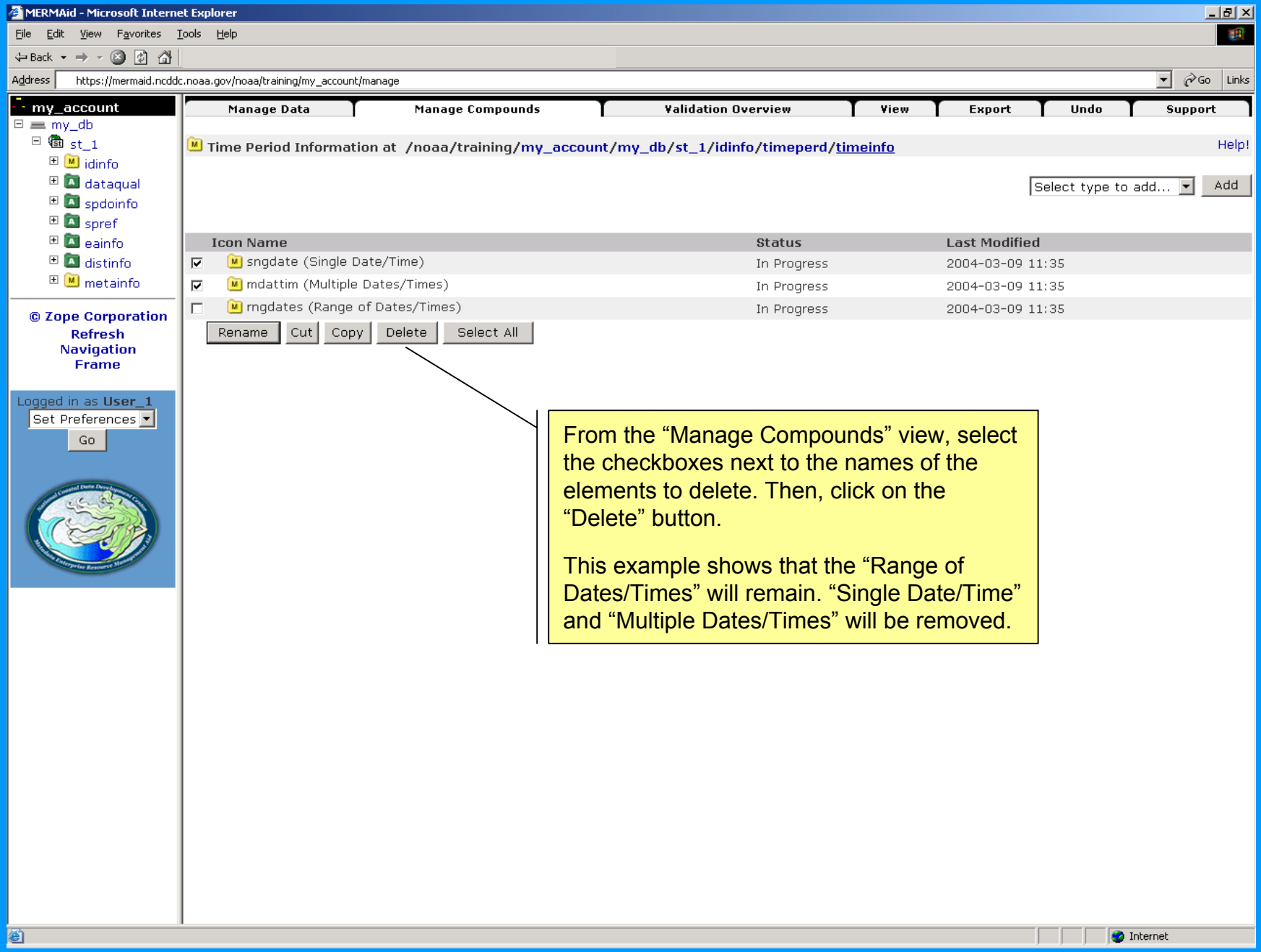
This example also shows validation errors within several Compound Elements in the “Metadata Reference Information” Compound Element.

Note: If the invalid element name does not link into a Compound Element, this indicates the element does not exist in this Record and must be added from the “Manage Compounds” view.

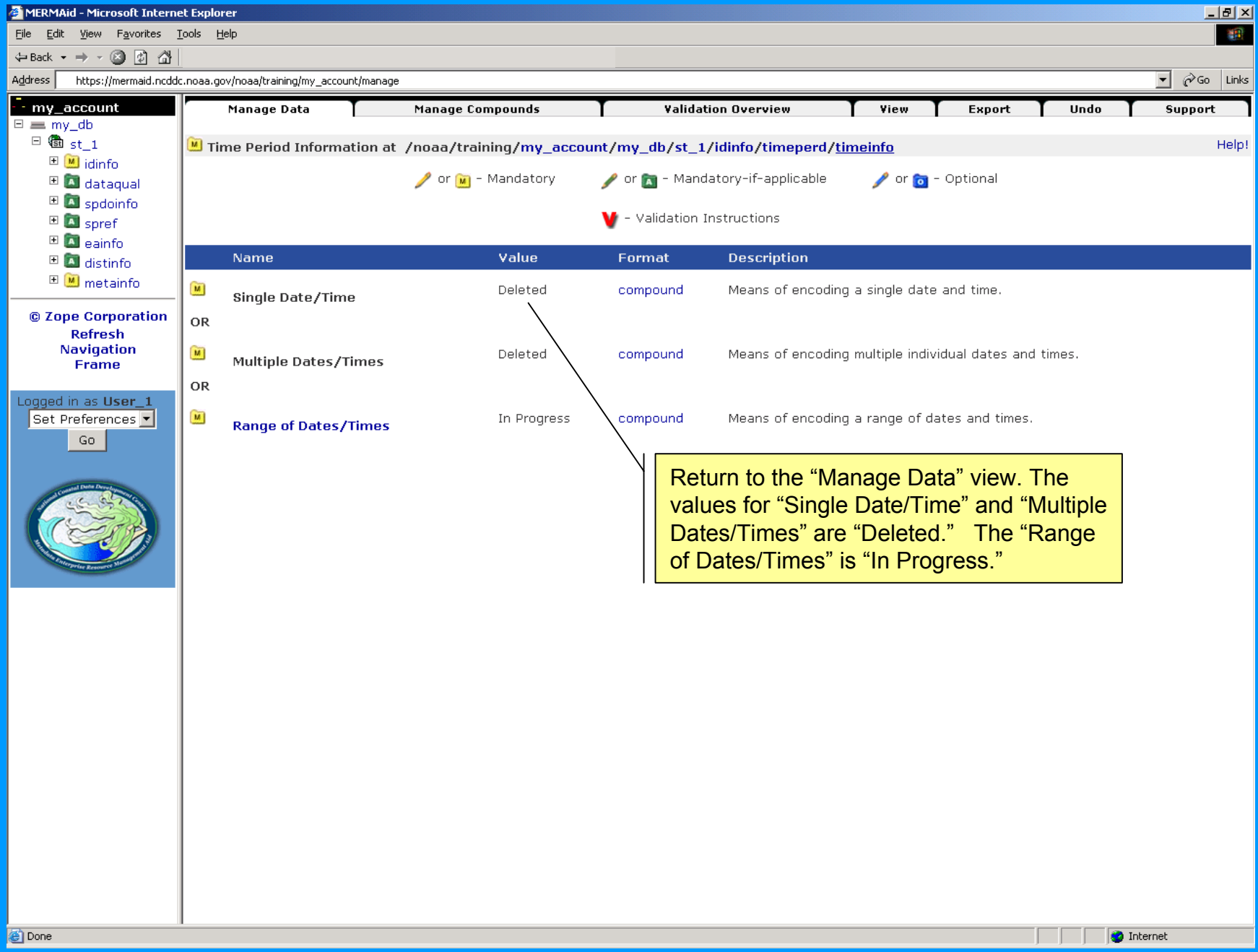
Managing Compound Elements



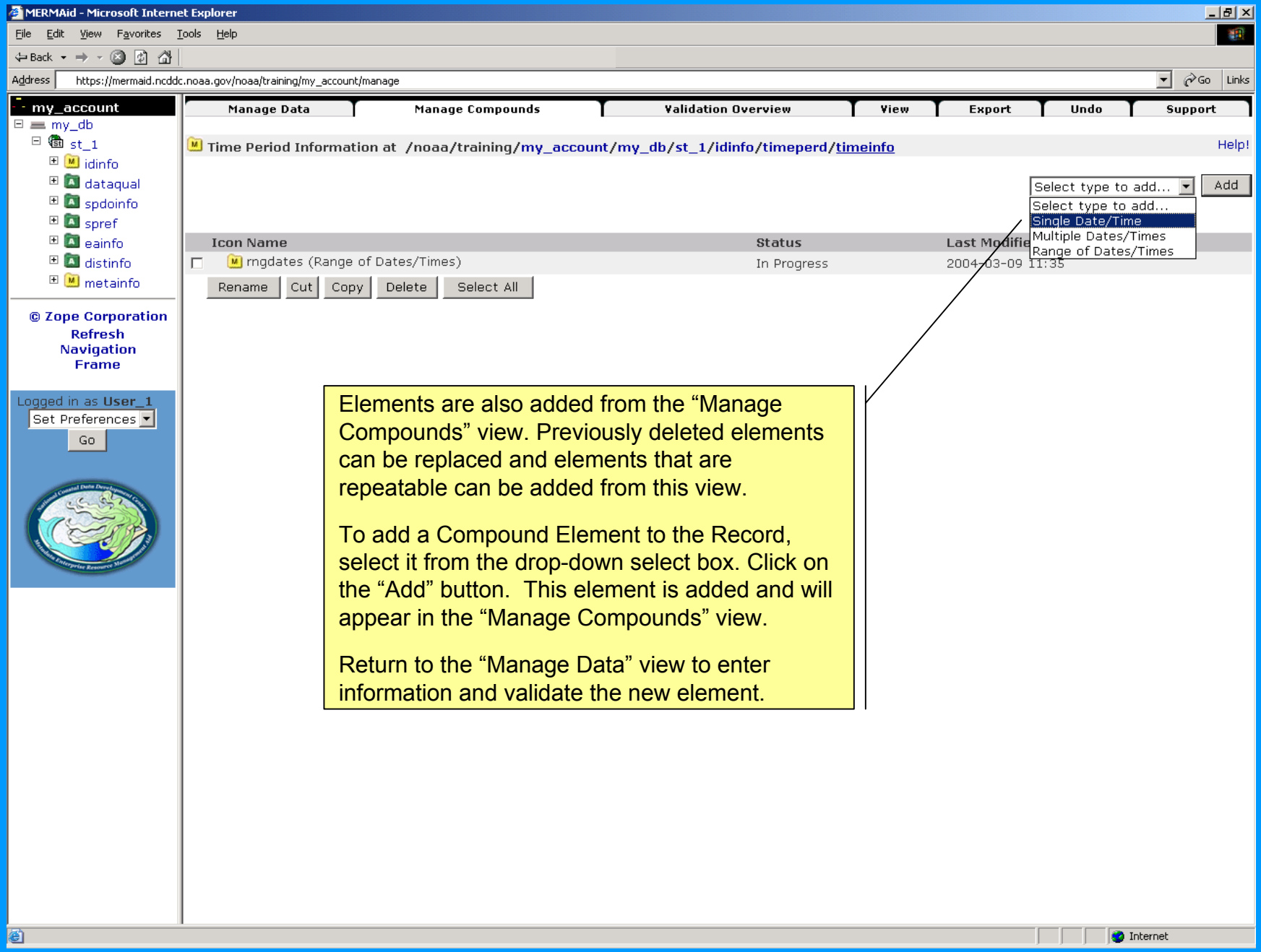
Managing Compound Elements



Managing Compound Elements



Managing Compound Elements

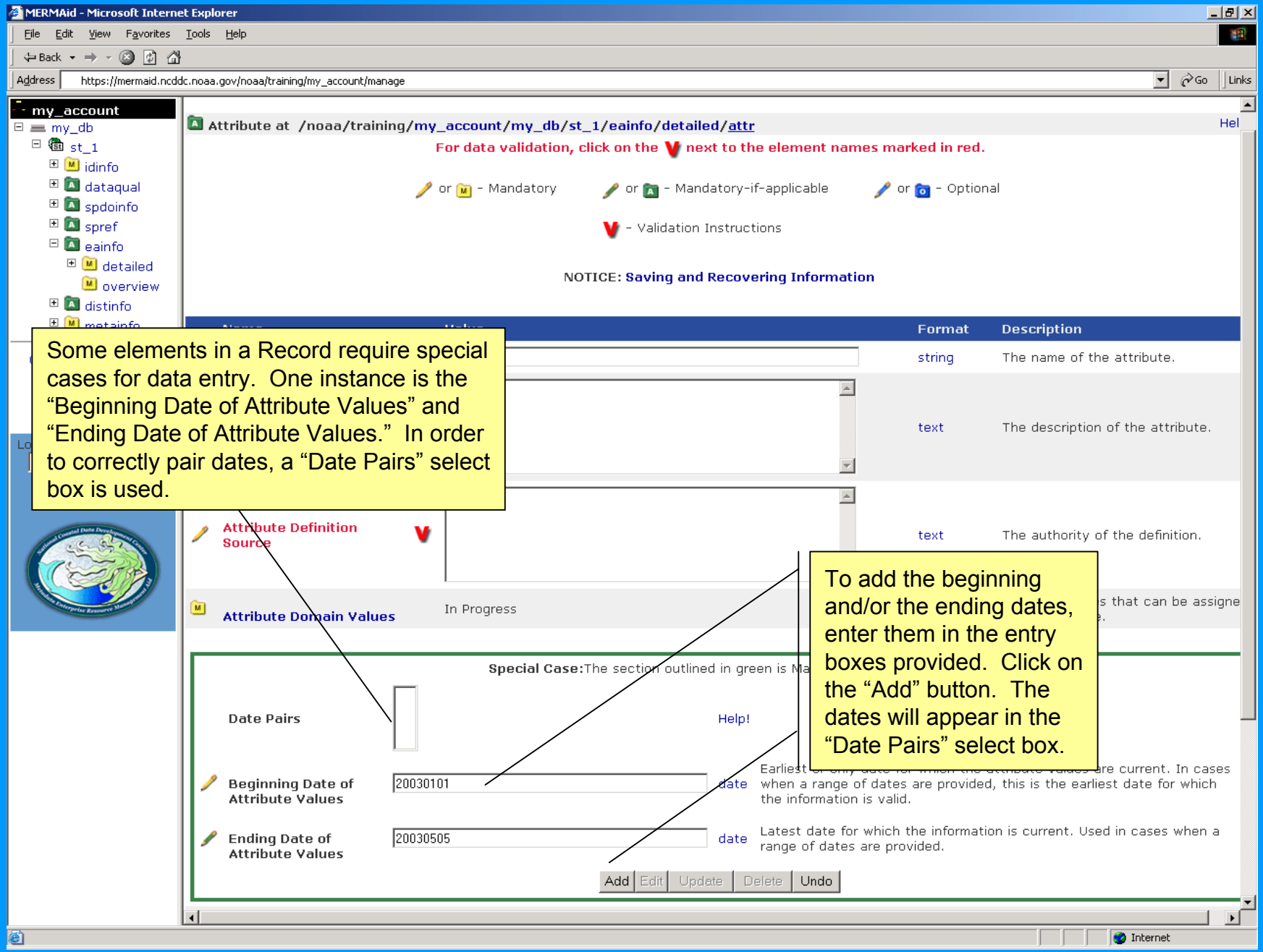


Elements are also added from the “Manage Compounds” view. Previously deleted elements can be replaced and elements that are repeatable can be added from this view.

To add a Compound Element to the Record, select it from the drop-down select box. Click on the “Add” button. This element is added and will appear in the “Manage Compounds” view.

Return to the “Manage Data” view to enter information and validate the new element.

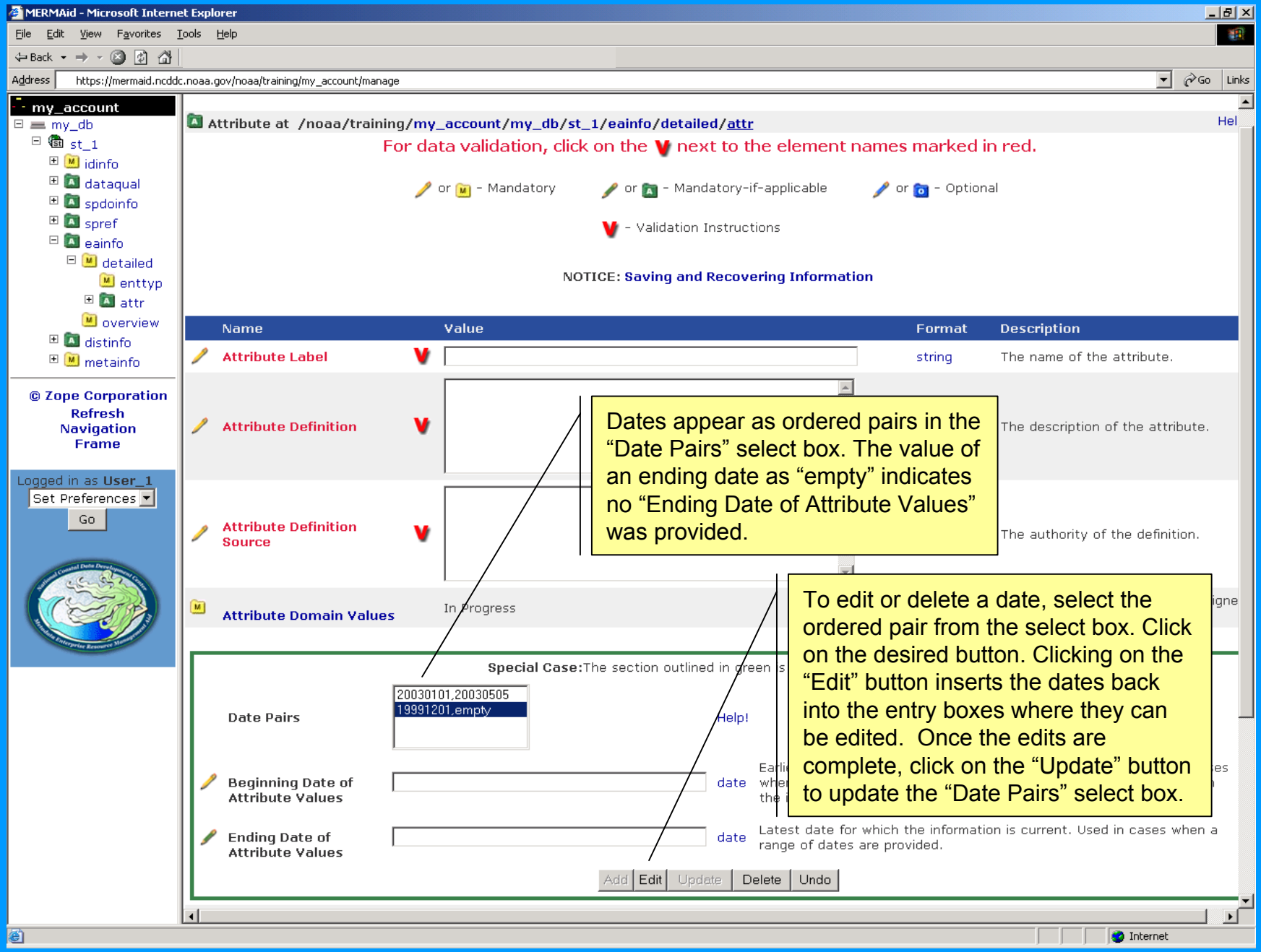
Special Cases – Entity and Attribute Date Pairs



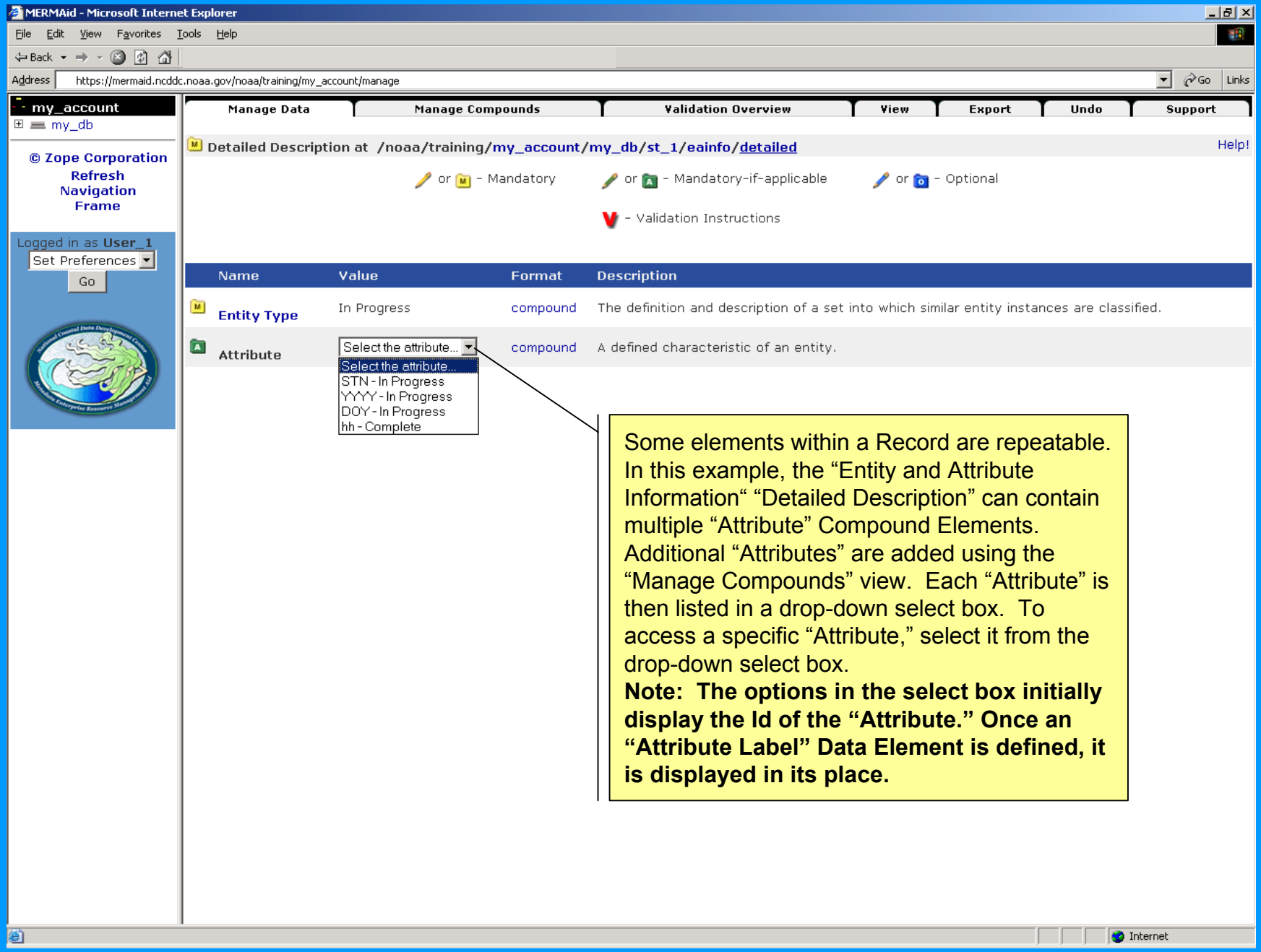
Some elements in a Record require special cases for data entry. One instance is the "Beginning Date of Attribute Values" and "Ending Date of Attribute Values." In order to correctly pair dates, a "Date Pairs" select box is used.

To add the beginning and/or the ending dates, enter them in the entry boxes provided. Click on the "Add" button. The dates will appear in the "Date Pairs" select box.

Special Cases – Entity and Attribute Date Pairs



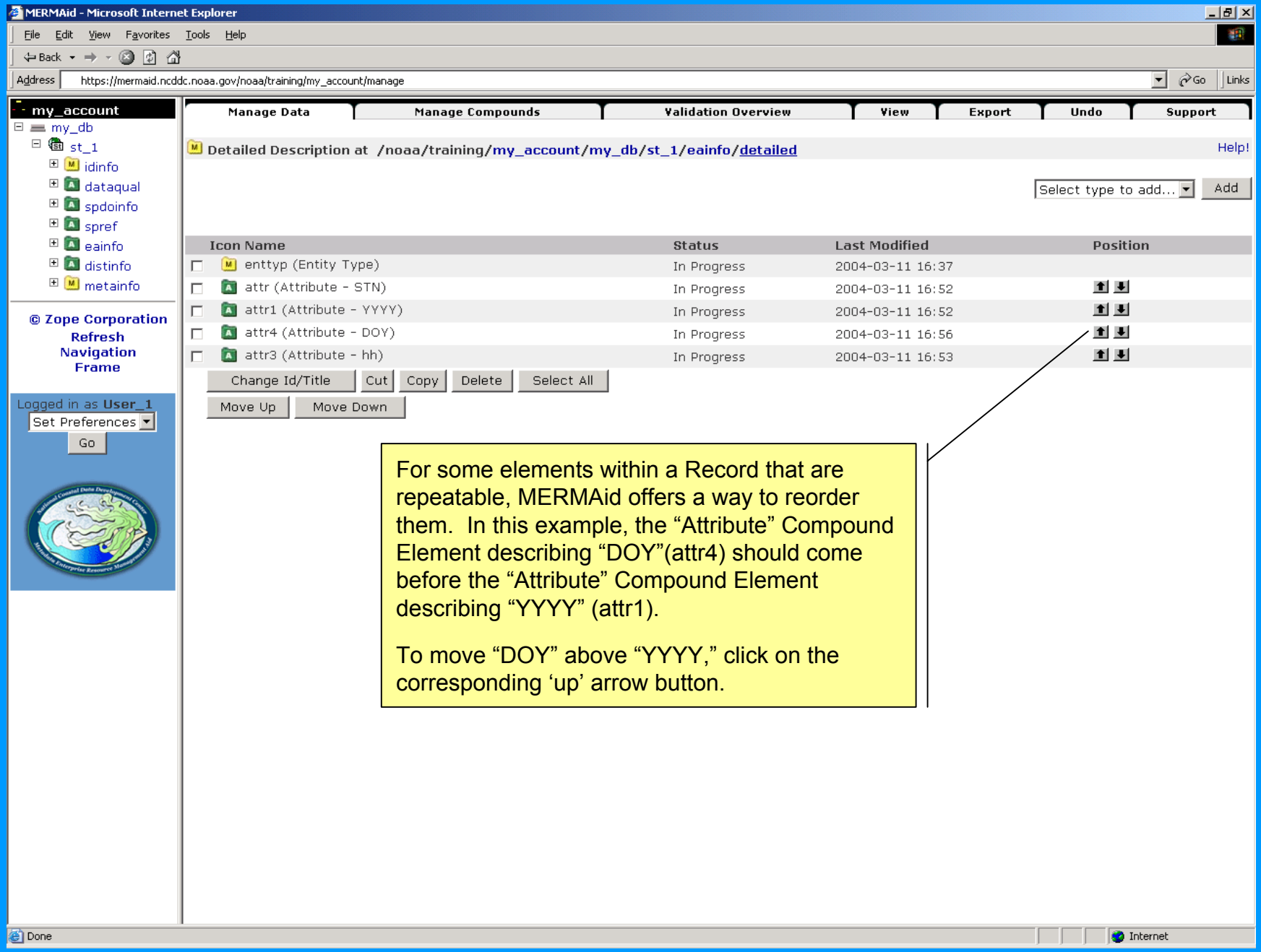
Special Cases – Repeatable Elements



Some elements within a Record are repeatable. In this example, the “Entity and Attribute Information“ “Detailed Description” can contain multiple “Attribute” Compound Elements. Additional “Attributes” are added using the “Manage Compounds” view. Each “Attribute” is then listed in a drop-down select box. To access a specific “Attribute,” select it from the drop-down select box.

Note: The options in the select box initially display the Id of the “Attribute.” Once an “Attribute Label” Data Element is defined, it is displayed in its place.

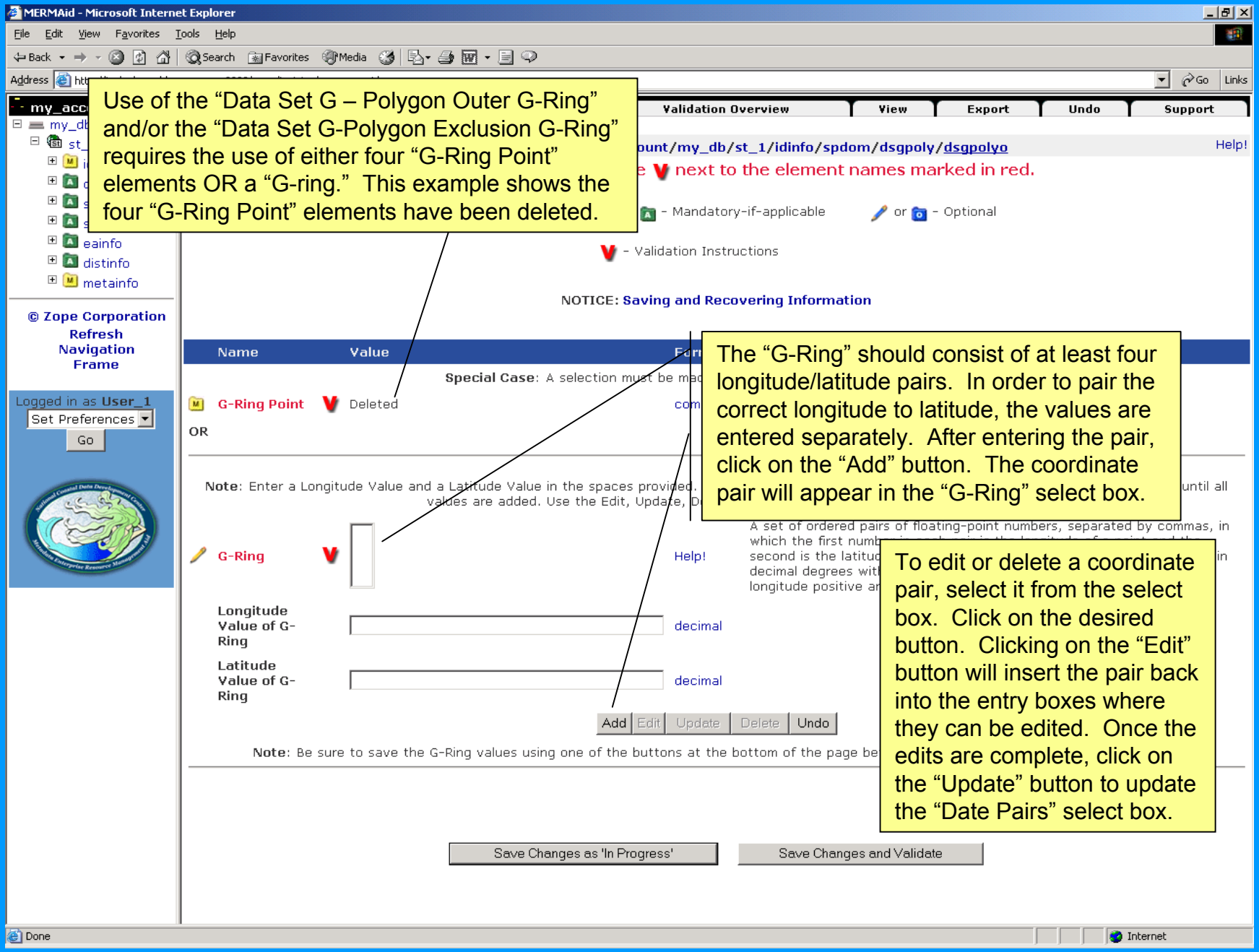
Special Cases – Ordering Compound Elements



For some elements within a Record that are repeatable, MERMAid offers a way to reorder them. In this example, the “Attribute” Compound Element describing “DOY”(attr4) should come before the “Attribute” Compound Element describing “YYYY” (attr1).

To move “DOY” above “YYYY,” click on the corresponding ‘up’ arrow button.

Special Cases – Data Set G - Polygon

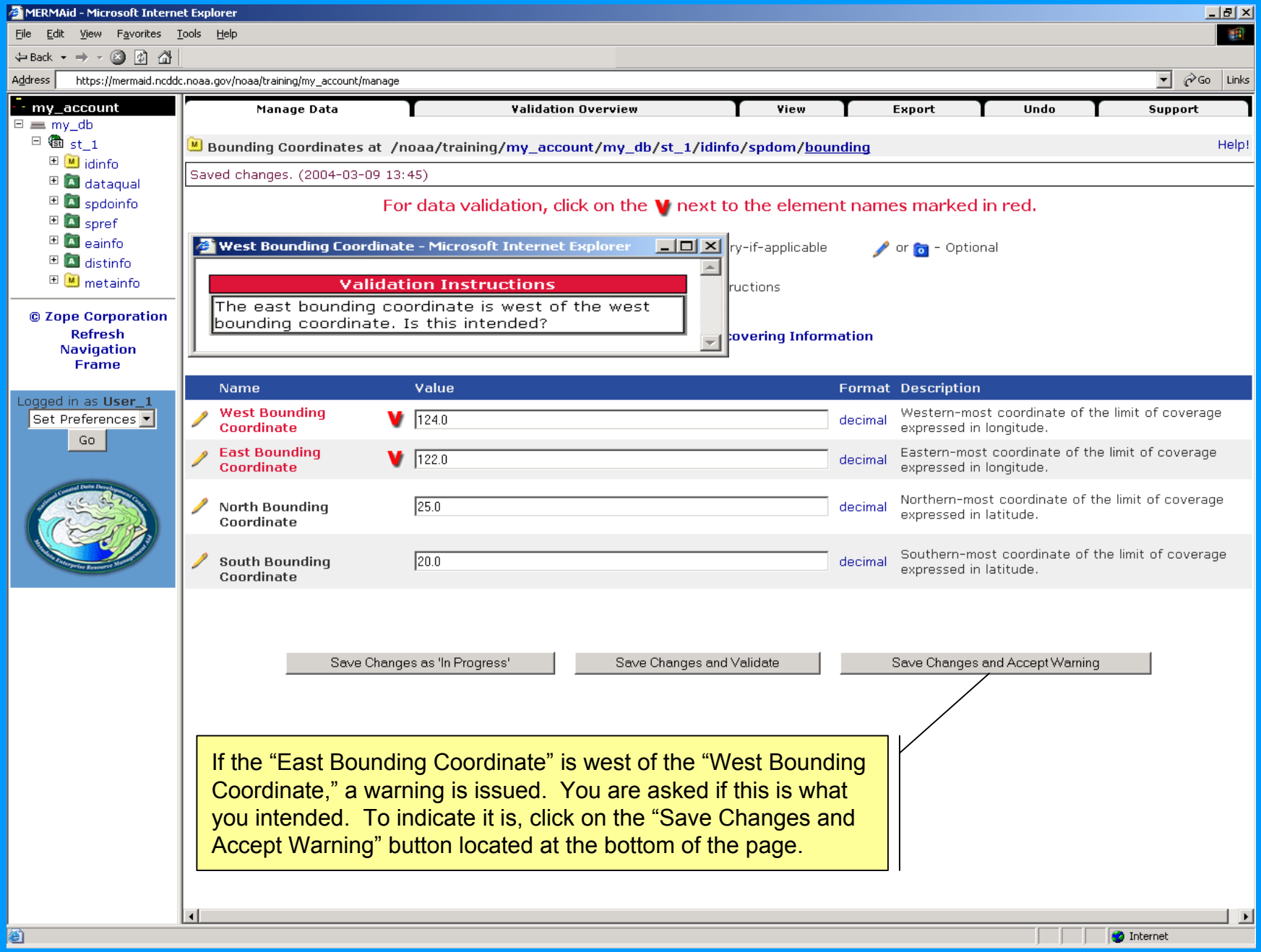


Use of the "Data Set G – Polygon Outer G-Ring" and/or the "Data Set G-Polygon Exclusion G-Ring" requires the use of either four "G-Ring Point" elements OR a "G-ring." This example shows the four "G-Ring Point" elements have been deleted.

The "G-Ring" should consist of at least four longitude/latitude pairs. In order to pair the correct longitude to latitude, the values are entered separately. After entering the pair, click on the "Add" button. The coordinate pair will appear in the "G-Ring" select box.

To edit or delete a coordinate pair, select it from the select box. Click on the desired button. Clicking on the "Edit" button will insert the pair back into the entry boxes where they can be edited. Once the edits are complete, click on the "Update" button to update the "Date Pairs" select box.

Special Cases – Bounding Coordinates



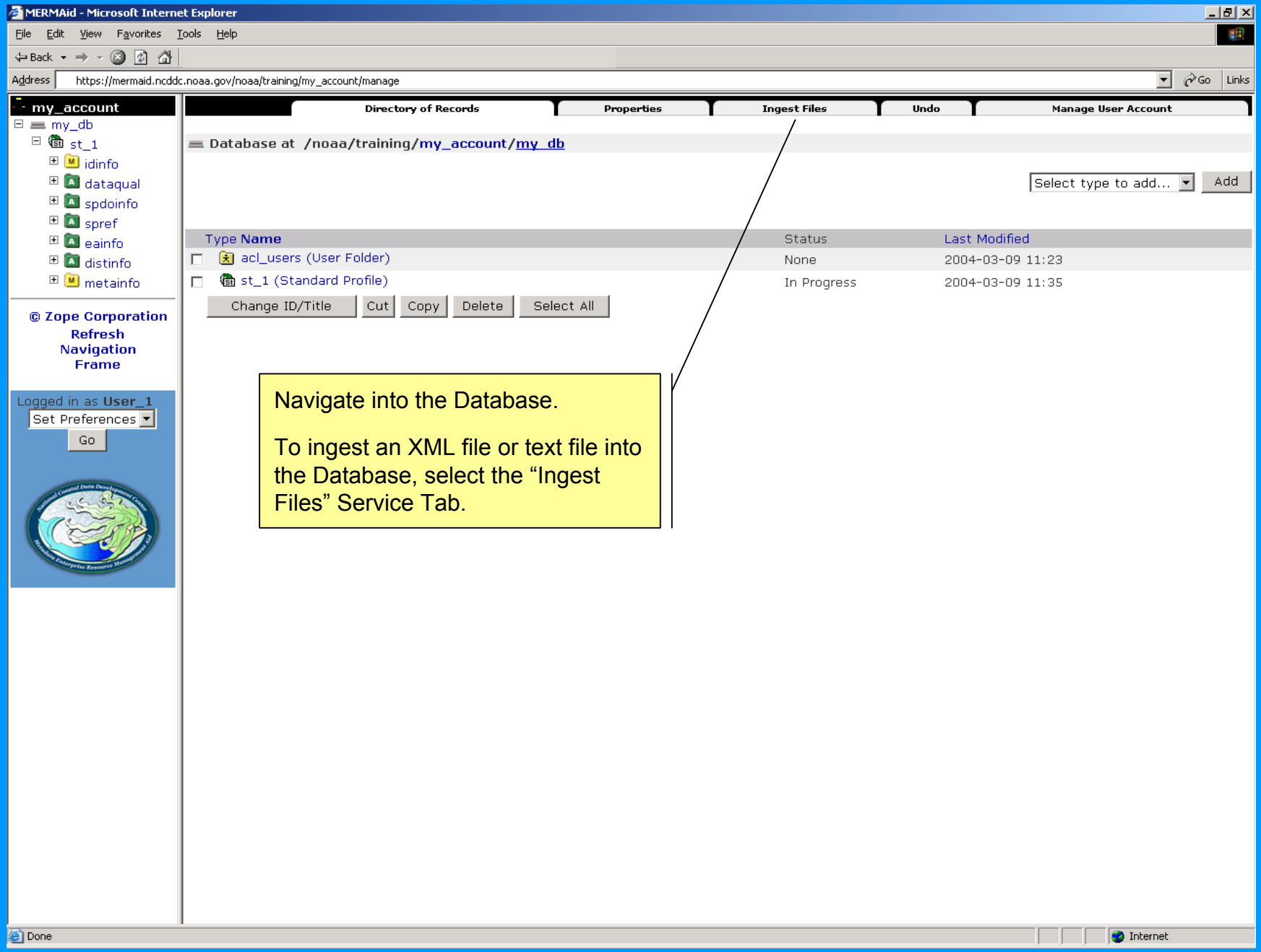
If the “East Bounding Coordinate” is west of the “West Bounding Coordinate,” a warning is issued. You are asked if this is what you intended. To indicate it is, click on the “Save Changes and Accept Warning” button located at the bottom of the page.

Ingesting Files

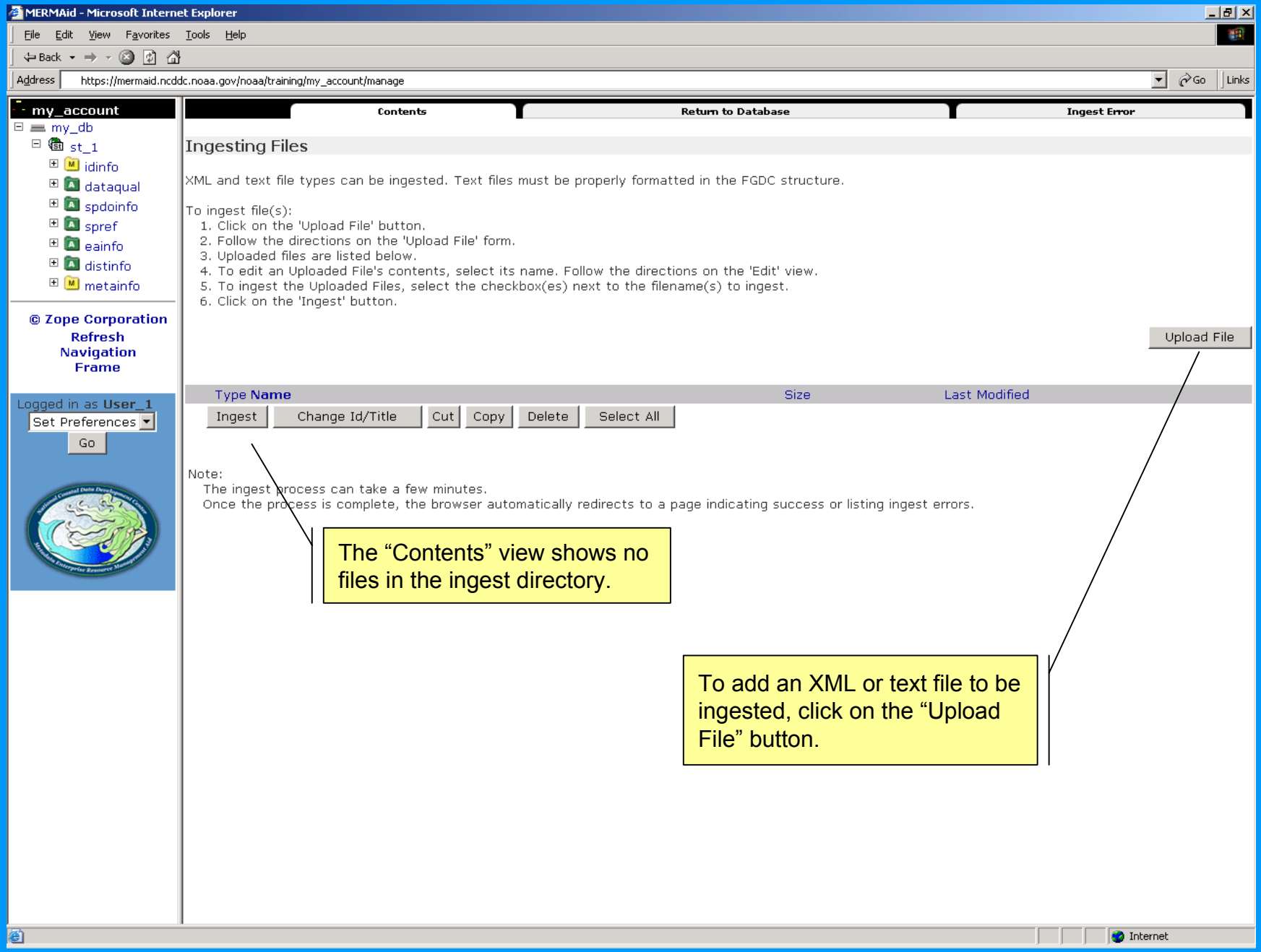
FGDC records created with other applications can be ingested into Databases and managed within MERMAid. Records to be ingested must be in either Extensible Markup Language (XML) or Text format. They must also follow the format and structure of the FGDC Standard, Biological or Shoreline Profiles.

To begin the ingest process, create or select the Database where you will manage the Record(s).

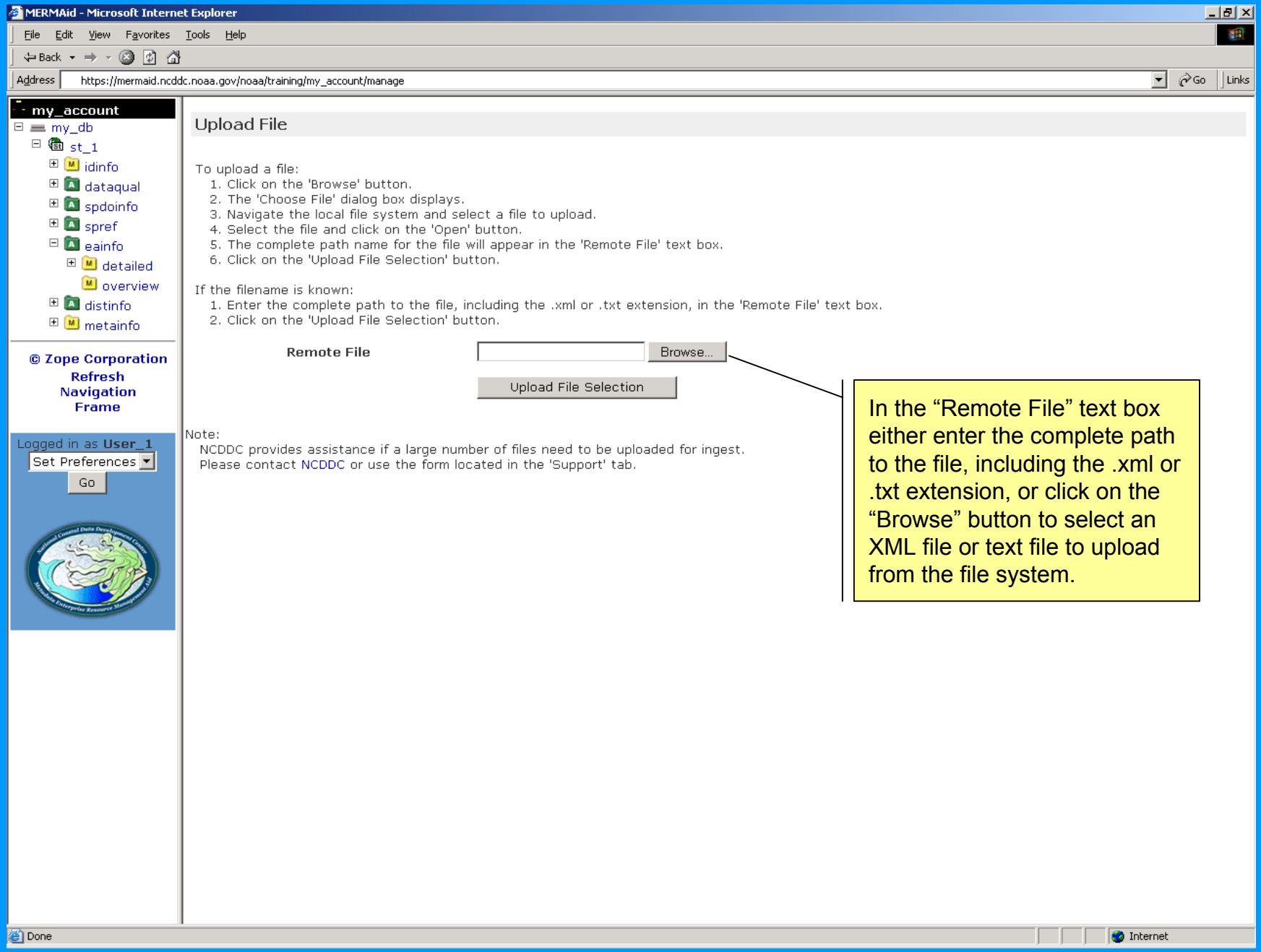
Ingesting Files



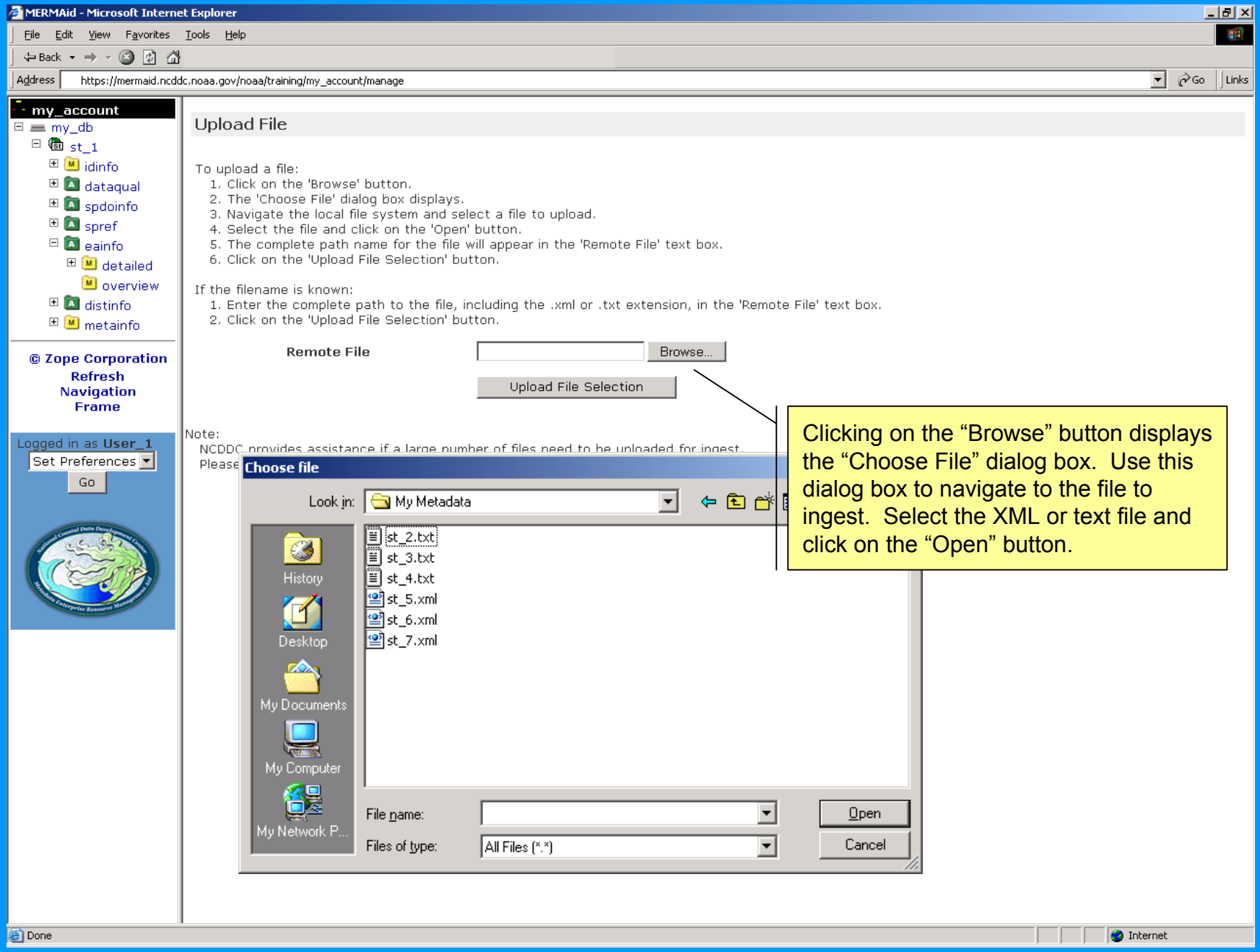
Ingest Files – “Contents” View



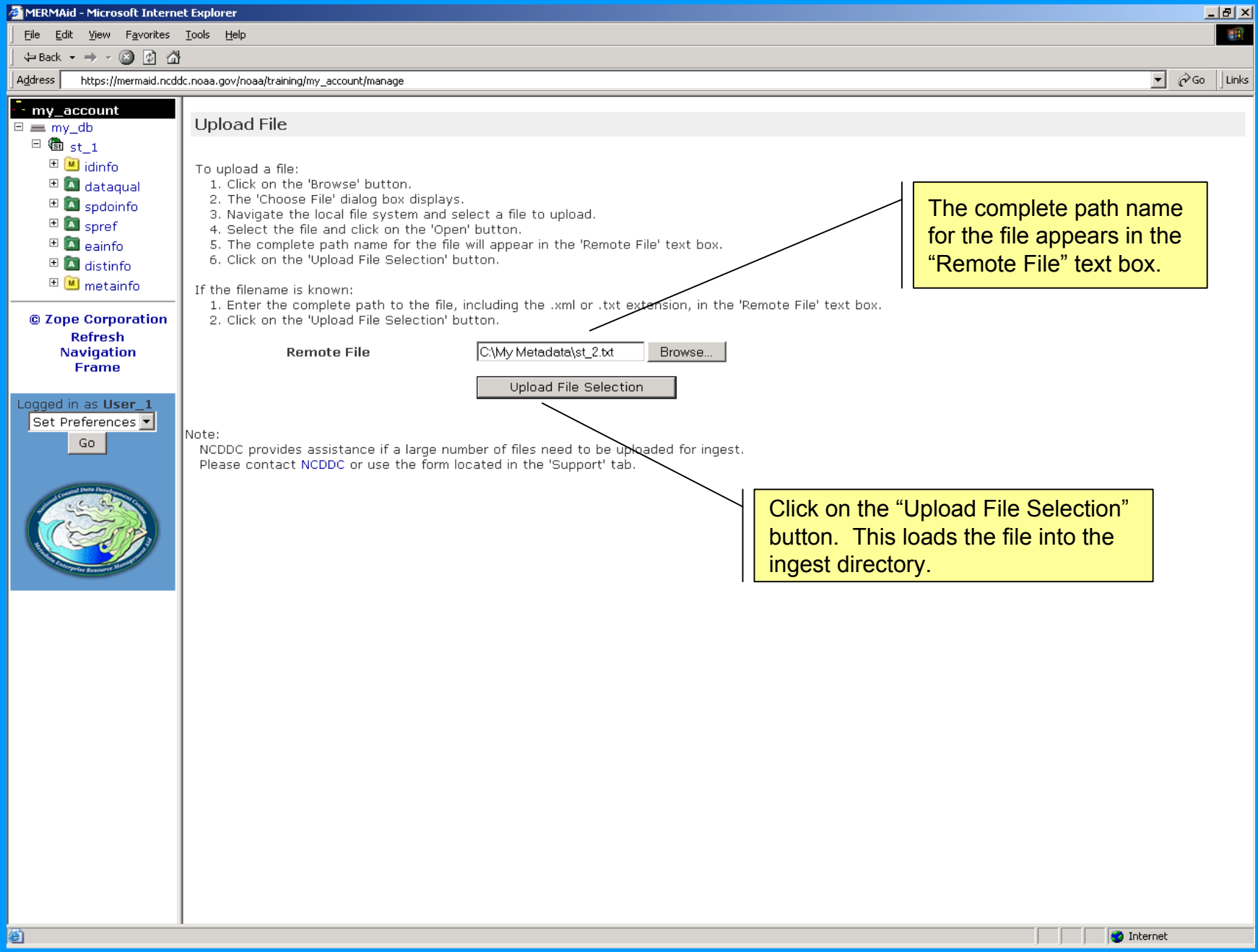
Ingest Files – “Upload File” Form



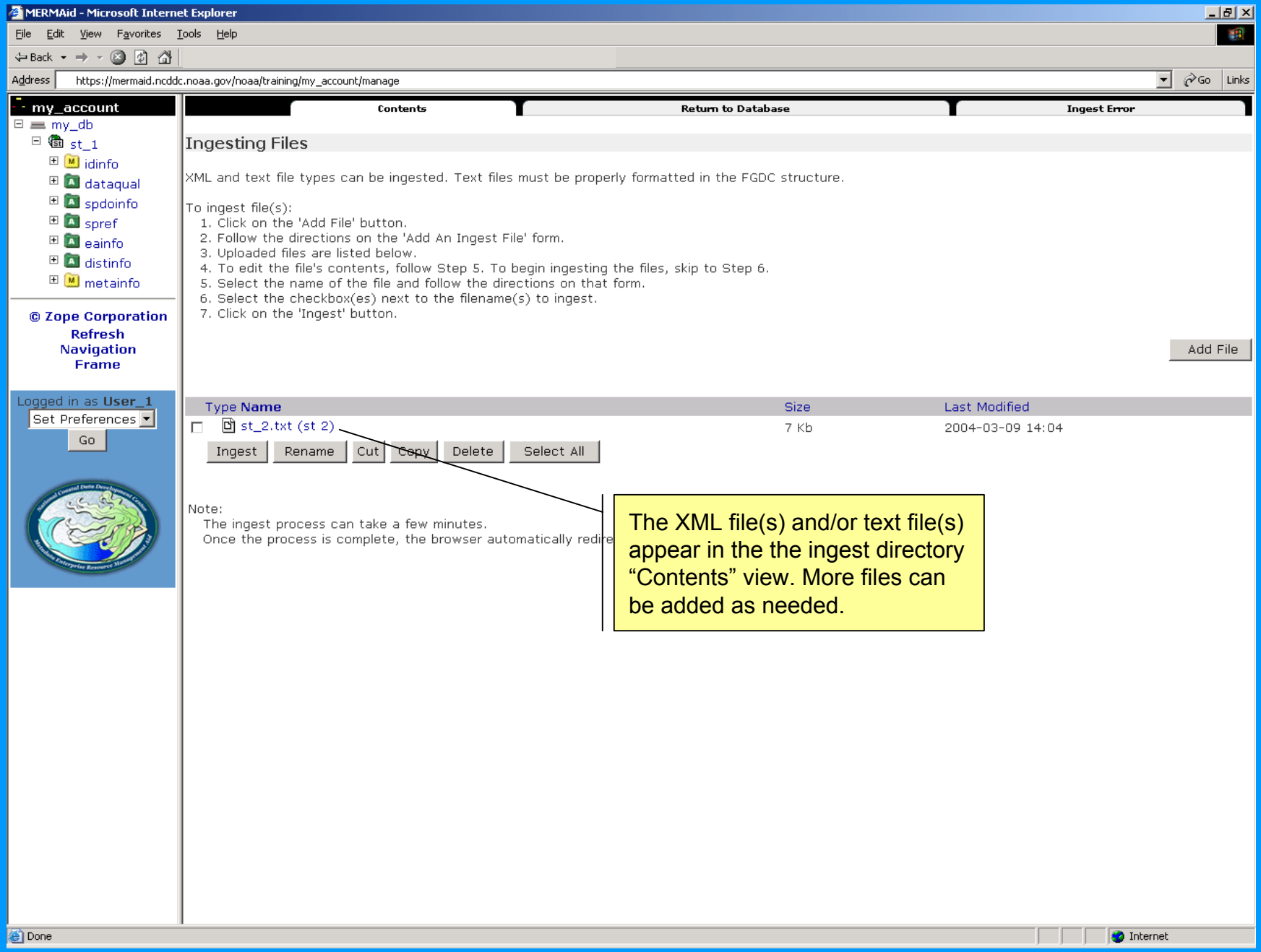
Ingest Files – “Choose File” Dialog Box



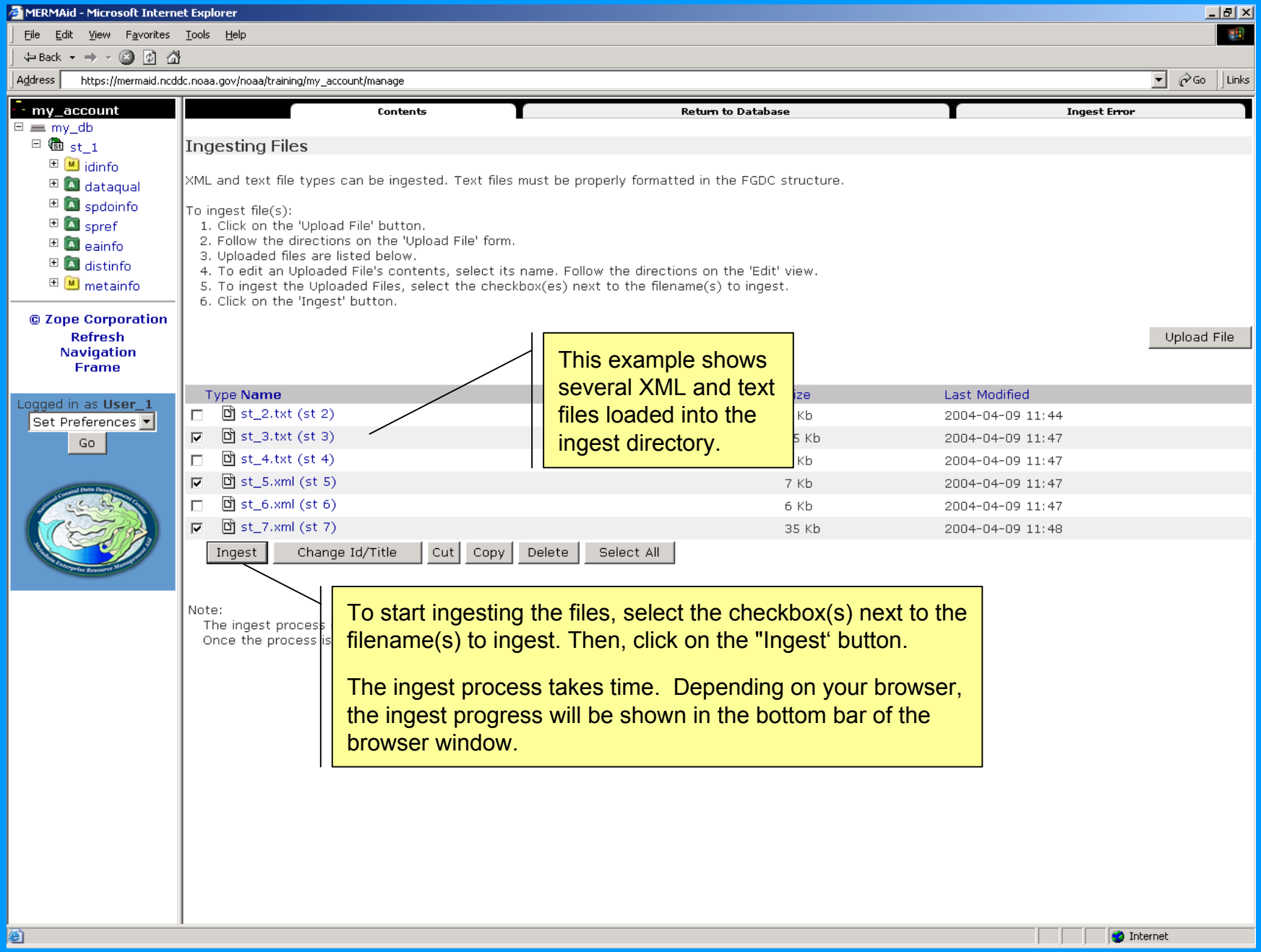
Ingest Files – Upload File Selection



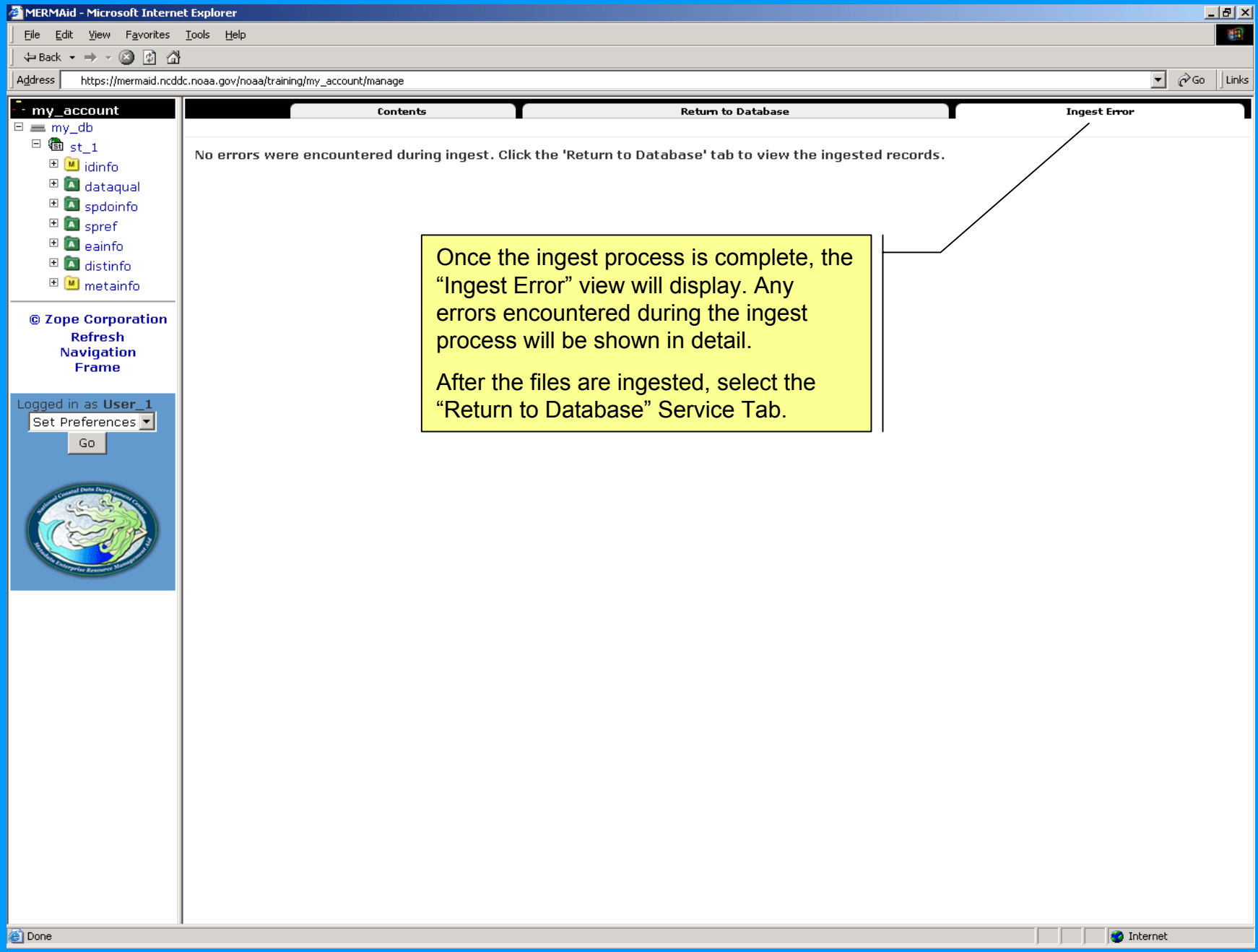
Ingest Files – “Contents” View



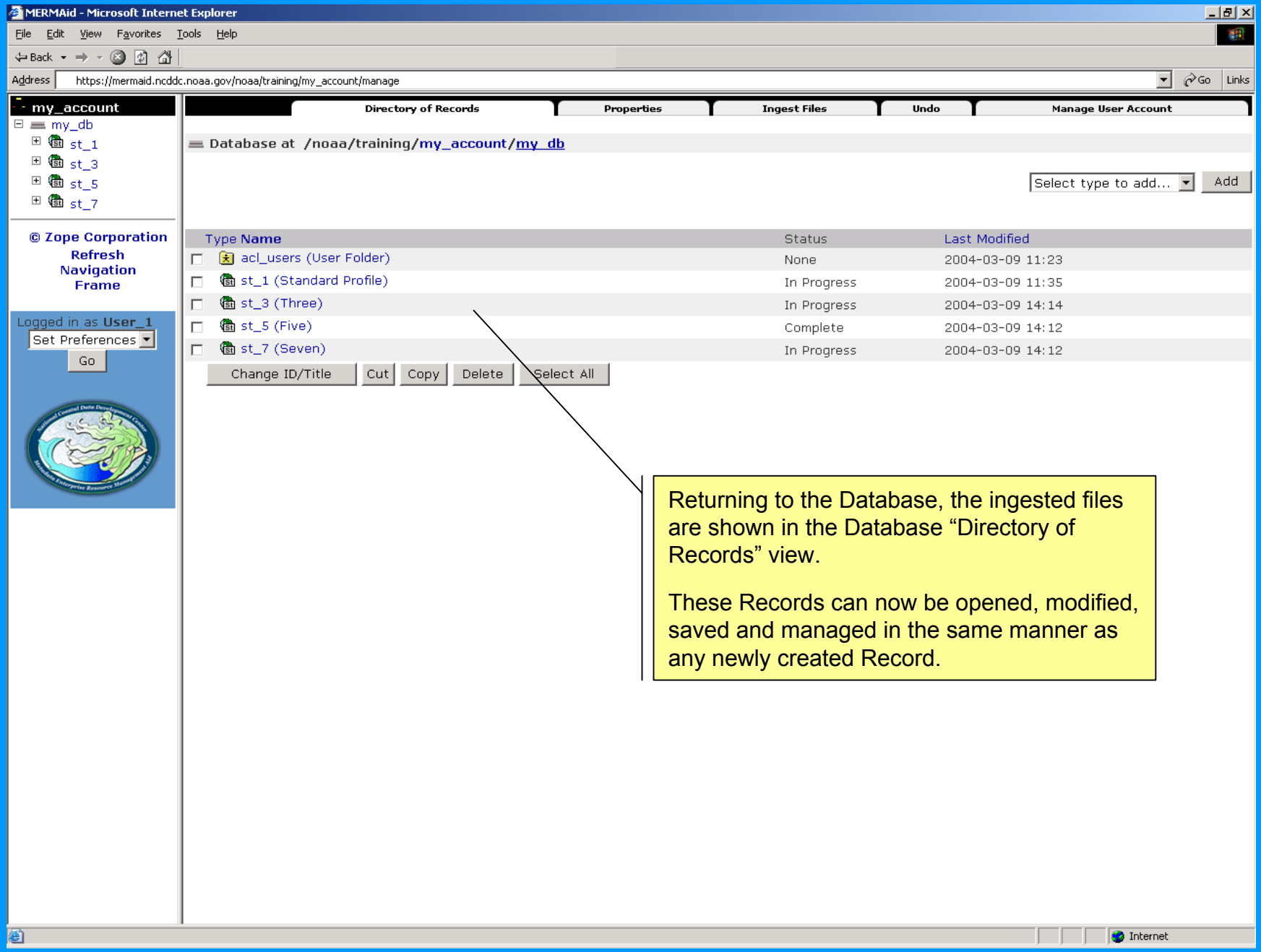
Ingest Files – “Ingest” Button



Ingest Files – “Ingest Error” View



Ingest Files – Resulting Metadata Records

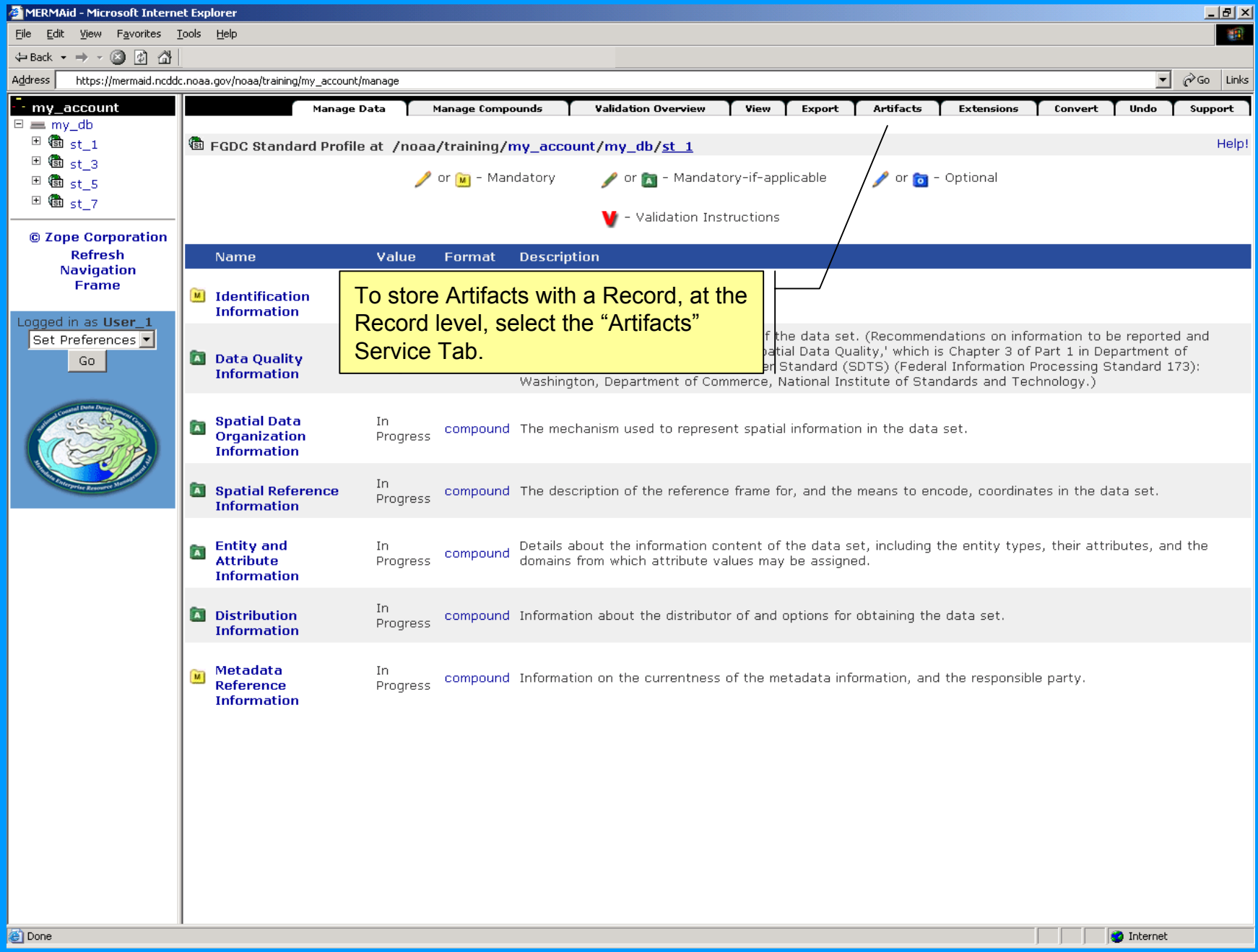


Storing Artifacts

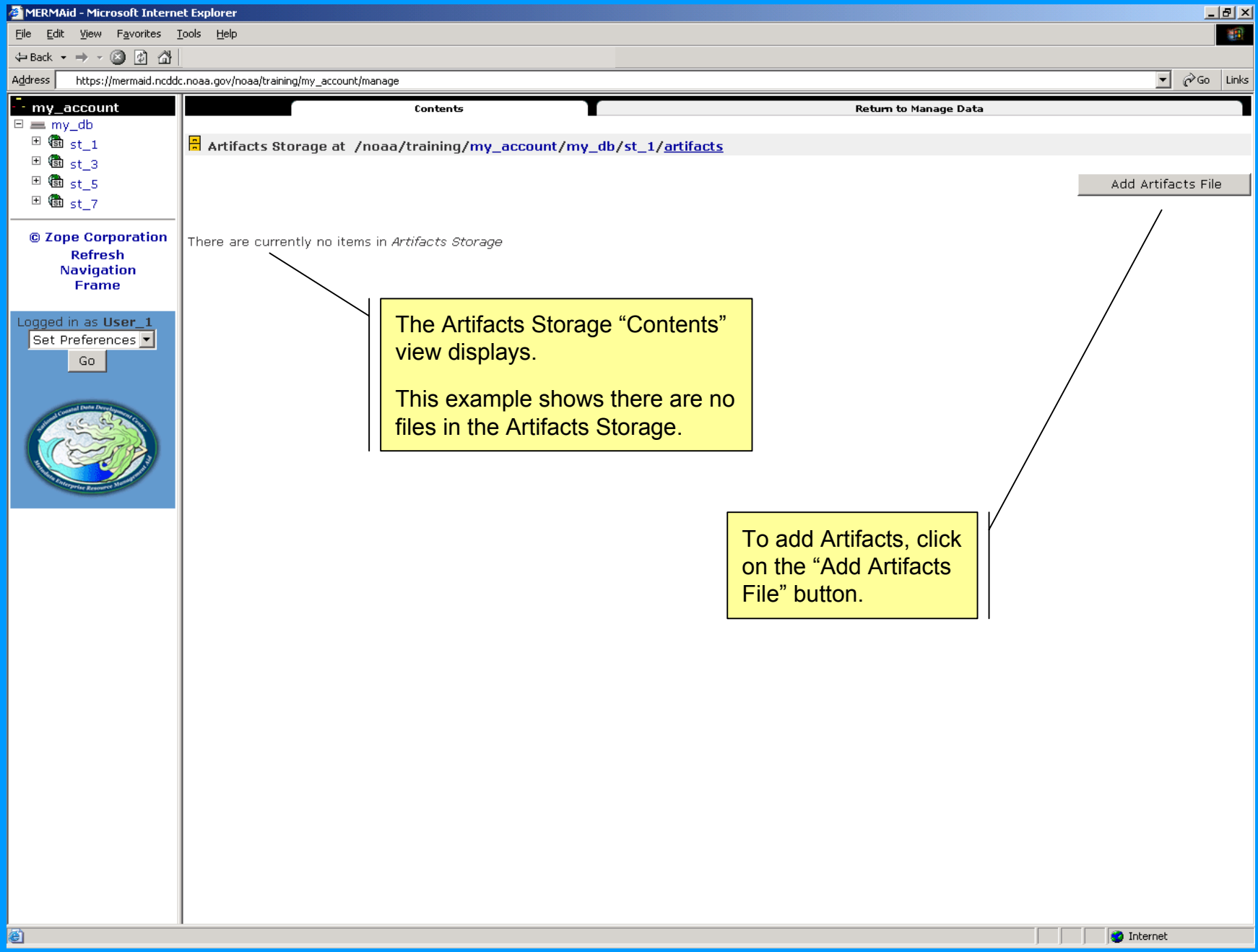
MERMAid provides a way to store information that is supplemental to a data set or that supports the Record. This supplemental information is called Artifacts. Artifacts can include items such as:

- data processing procedures
- instrumentation or equipment lists
- copies of proposals or citations
- emails

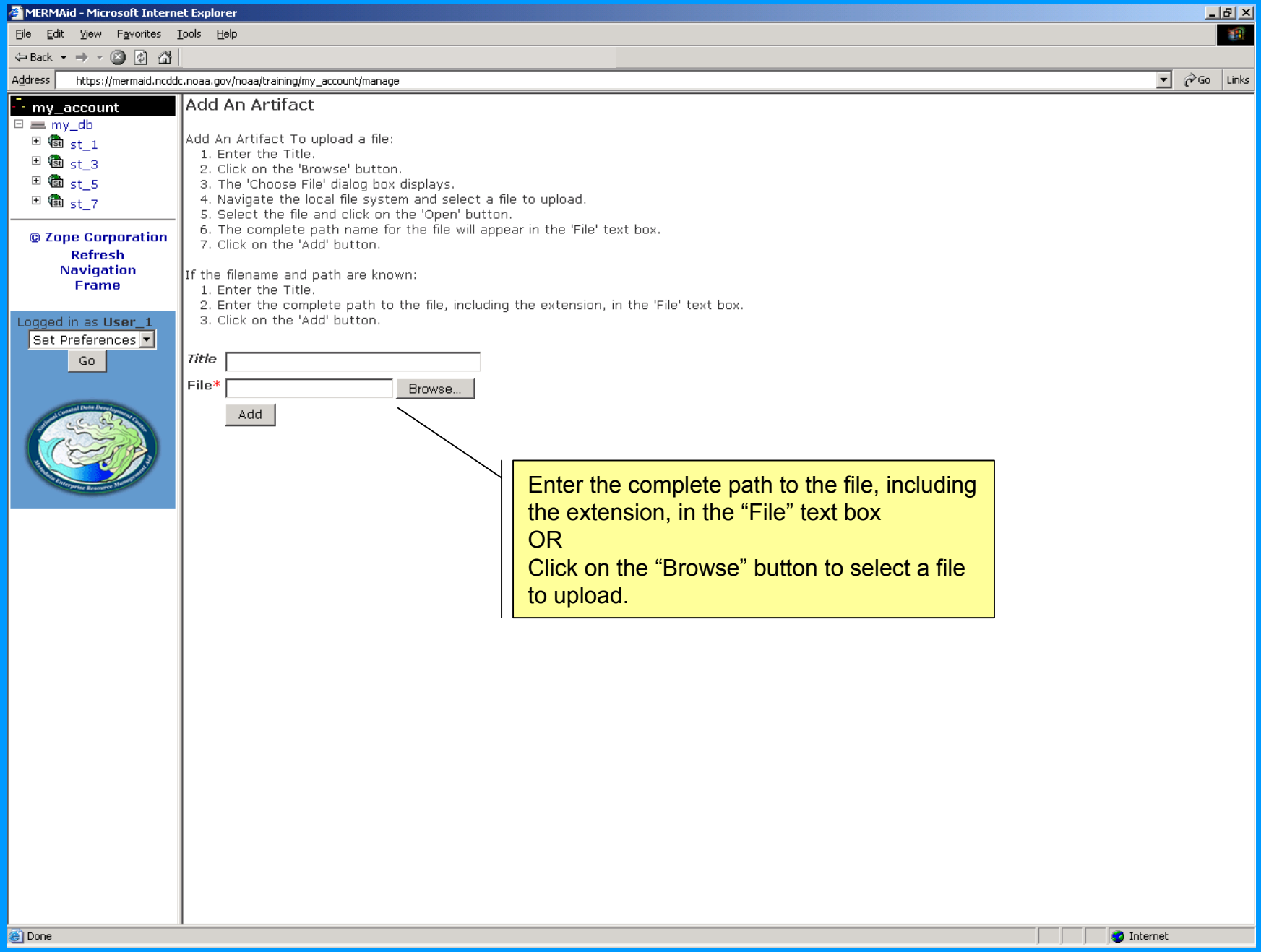
Storing Artifacts



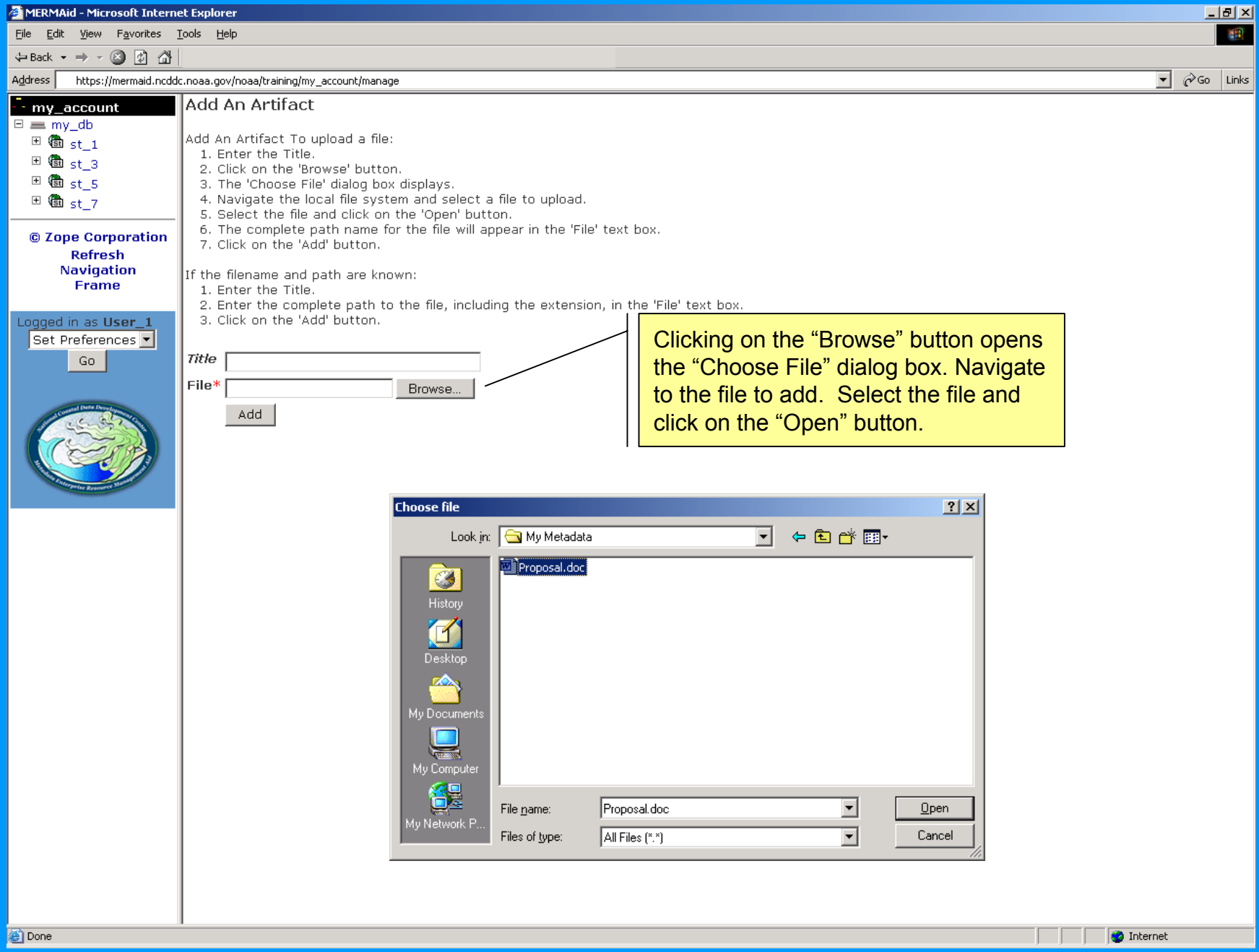
Storing Artifacts – “Contents” View



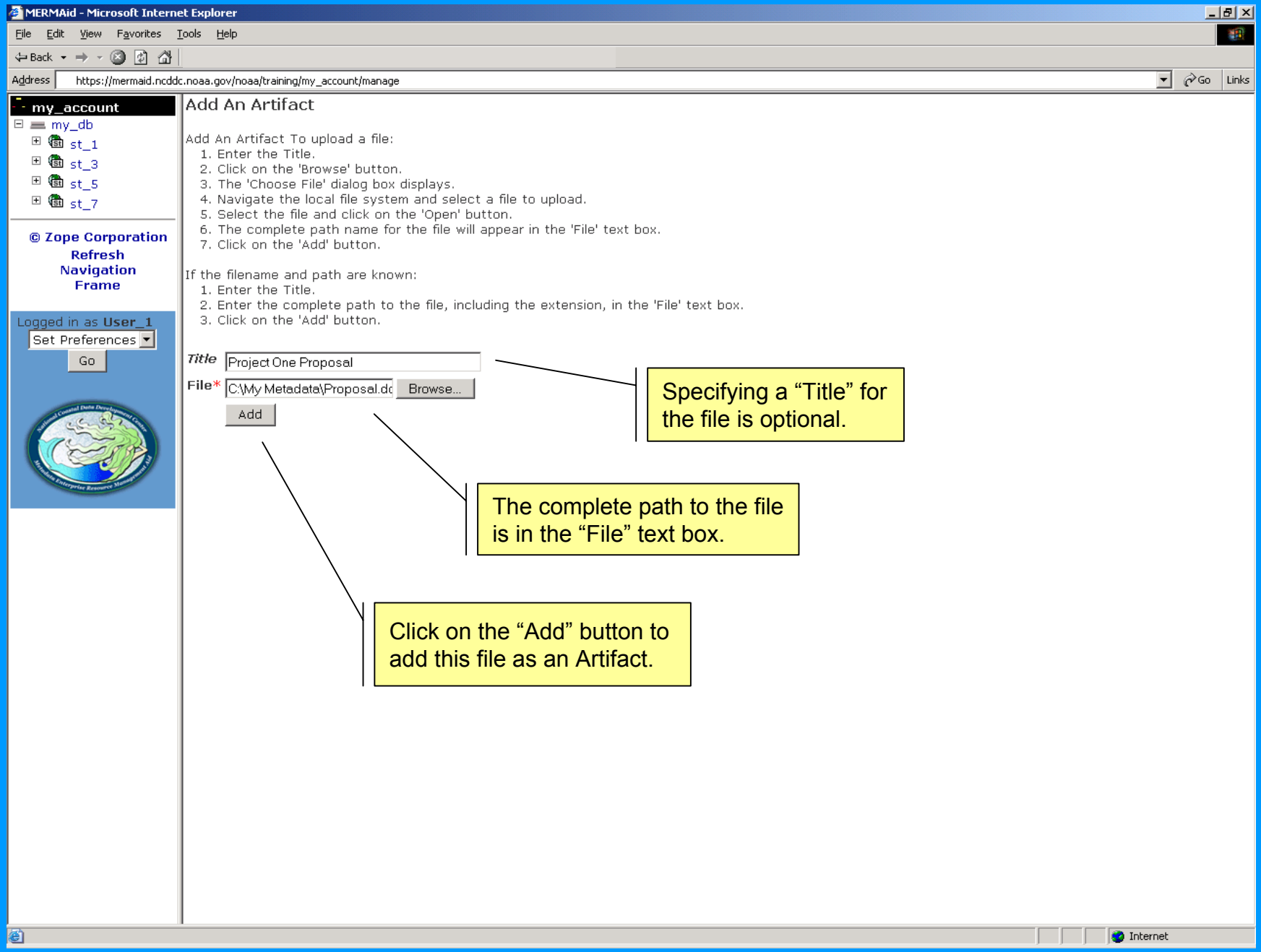
Storing Artifacts – “Add An Artifact” Form



Storing Artifacts – “Choose File” Dialog Box

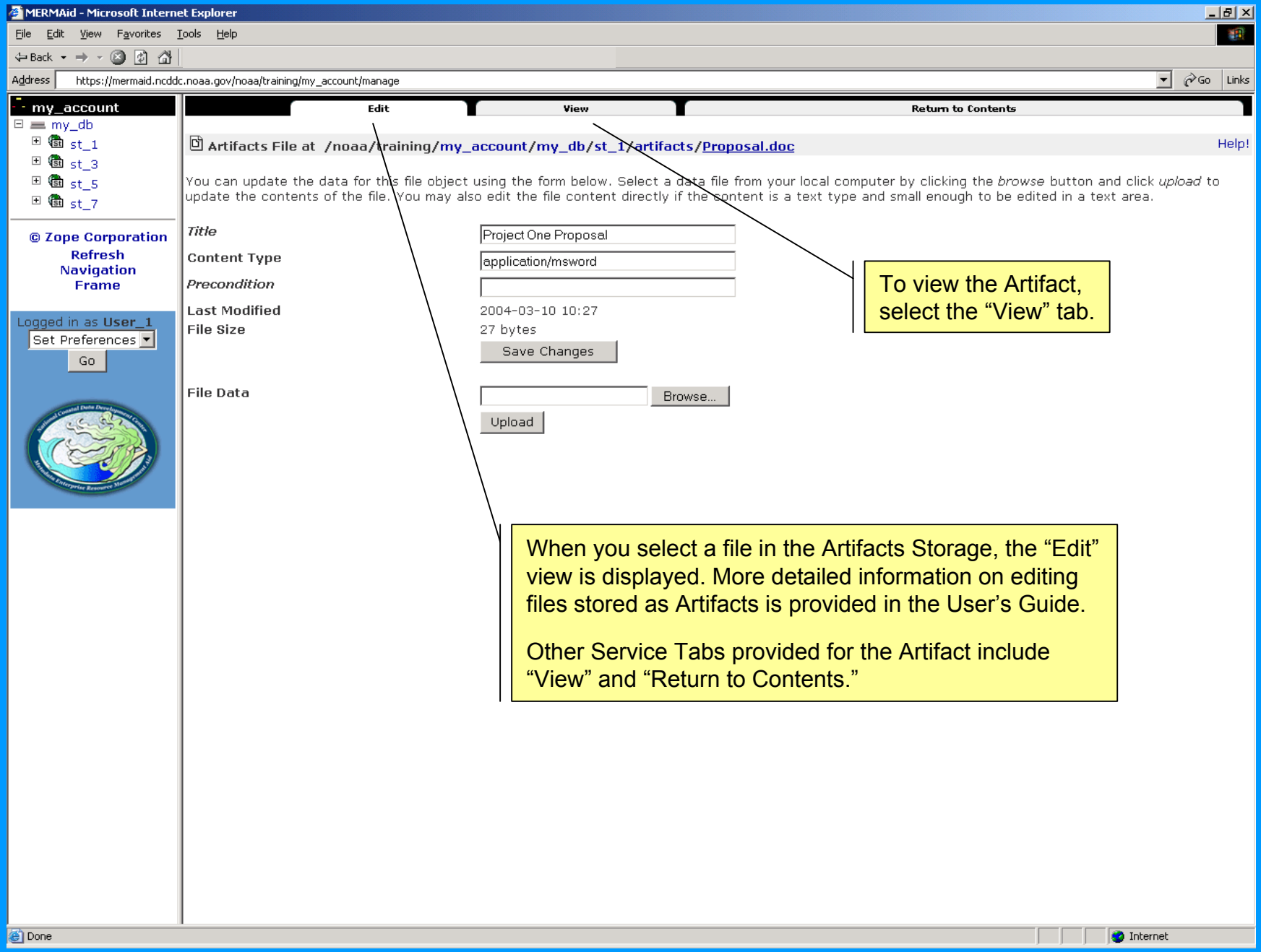


Storing Artifacts – Add File Selection



Storing Artifacts – “Contents” View

Storing Artifacts – “Edit” View

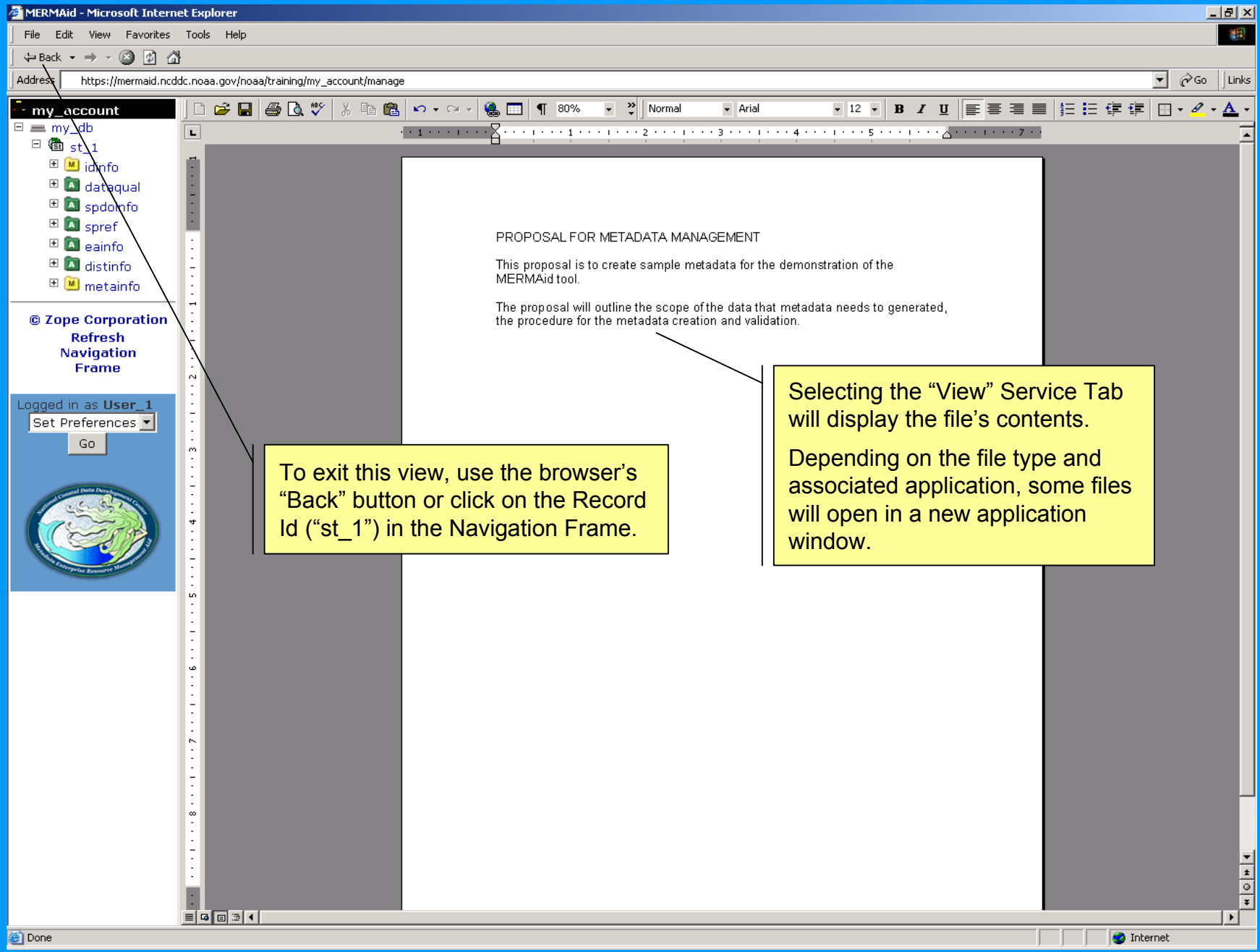


To view the Artifact, select the “View” tab.

When you select a file in the Artifacts Storage, the “Edit” view is displayed. More detailed information on editing files stored as Artifacts is provided in the User’s Guide.

Other Service Tabs provided for the Artifact include “View” and “Return to Contents.”

Storing Artifacts – “View” View



Creating Additional User Accounts

Additional user accounts can be established within Data Sources and Databases. Accounts are managed through the “acl_users (User Folder)” that exists in each Data Source and Database.

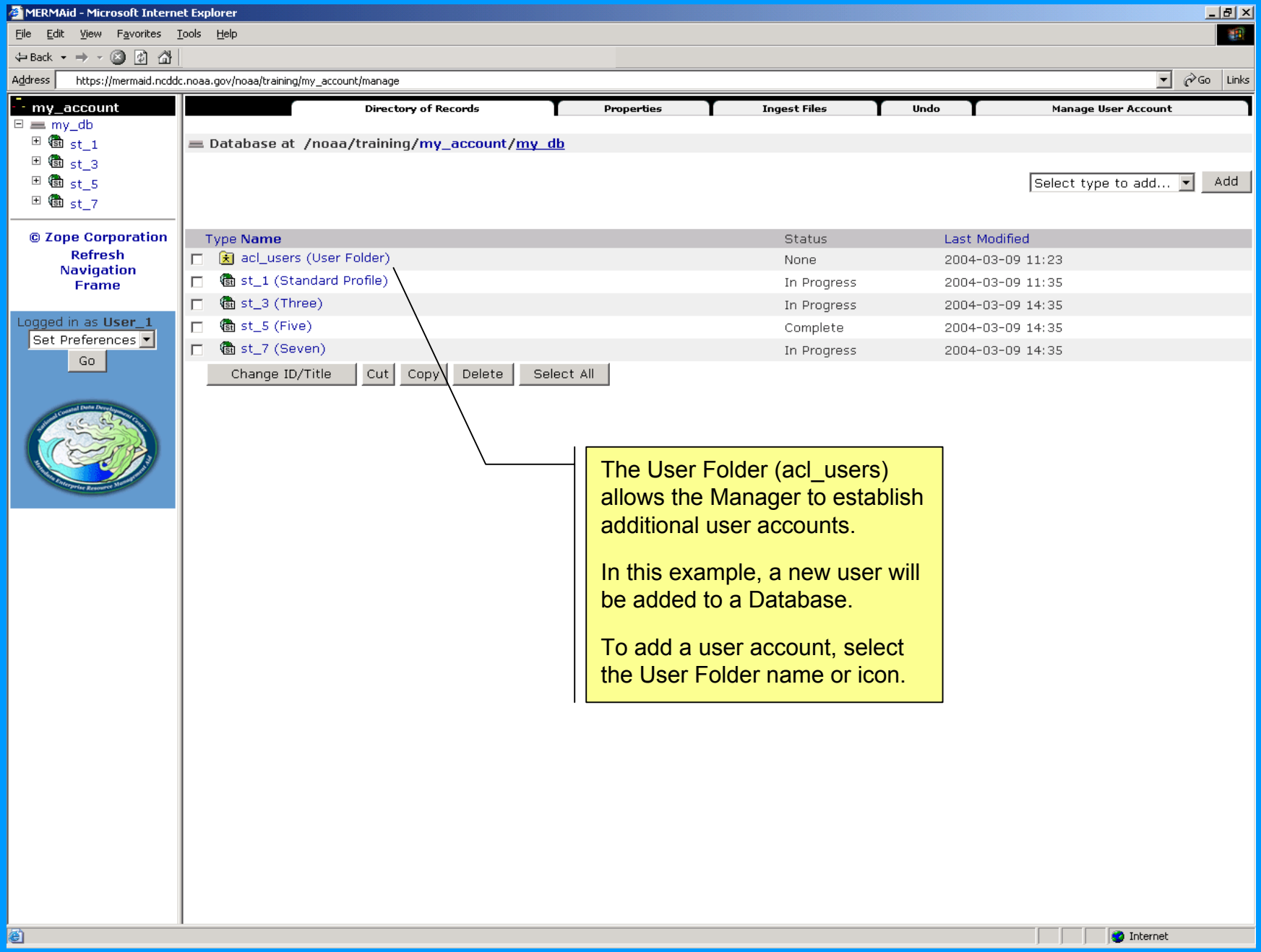
Since MERMAid is structured in a hierarchy (Data Source, Database, Record), the location at which a user is added provides the user access to anything at or below that location. For example, adding a user at the Data Source allows that user access to all Databases and Records contained within the Data Source. Adding a user to a specific Database allows that user access only to that Database and the Records it contains.

In addition to the location at which the account is established, the User’s role can be defined. There are three roles to choose from:

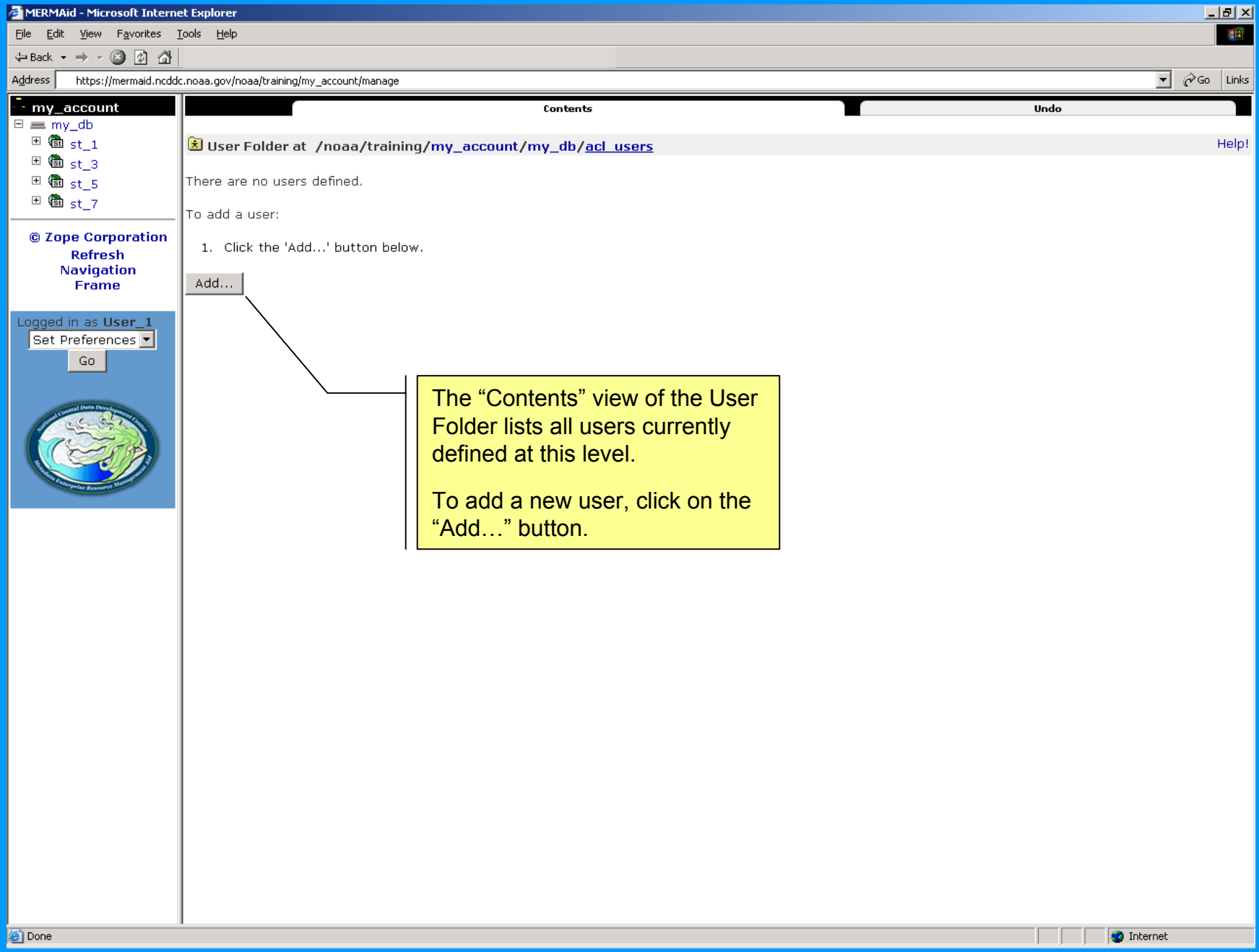
- Custodian: may create, modify and manage Records.
- Manager: may create Resource Folders, Data Sources, Databases, user accounts and create, modify and manage Records.
- Restricted: may create, modify and manage Records.

Note: Currently, the Custodian and Restricted roles have the same permissions.

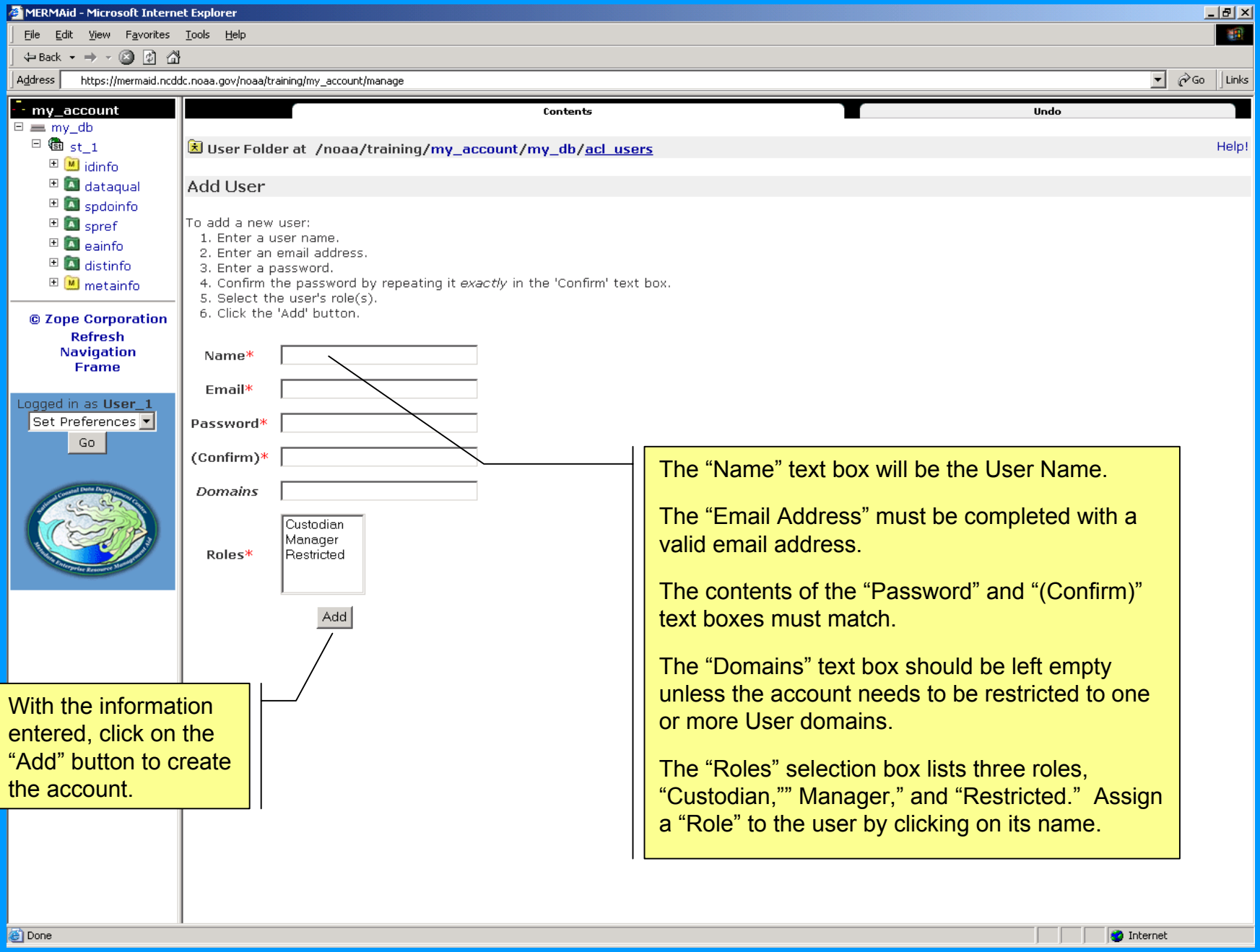
Creating Additional User Accounts



User Folder – “Contents” View



User Folder – “Add User” Form



With the information entered, click on the “Add” button to create the account.

The “Name” text box will be the User Name.

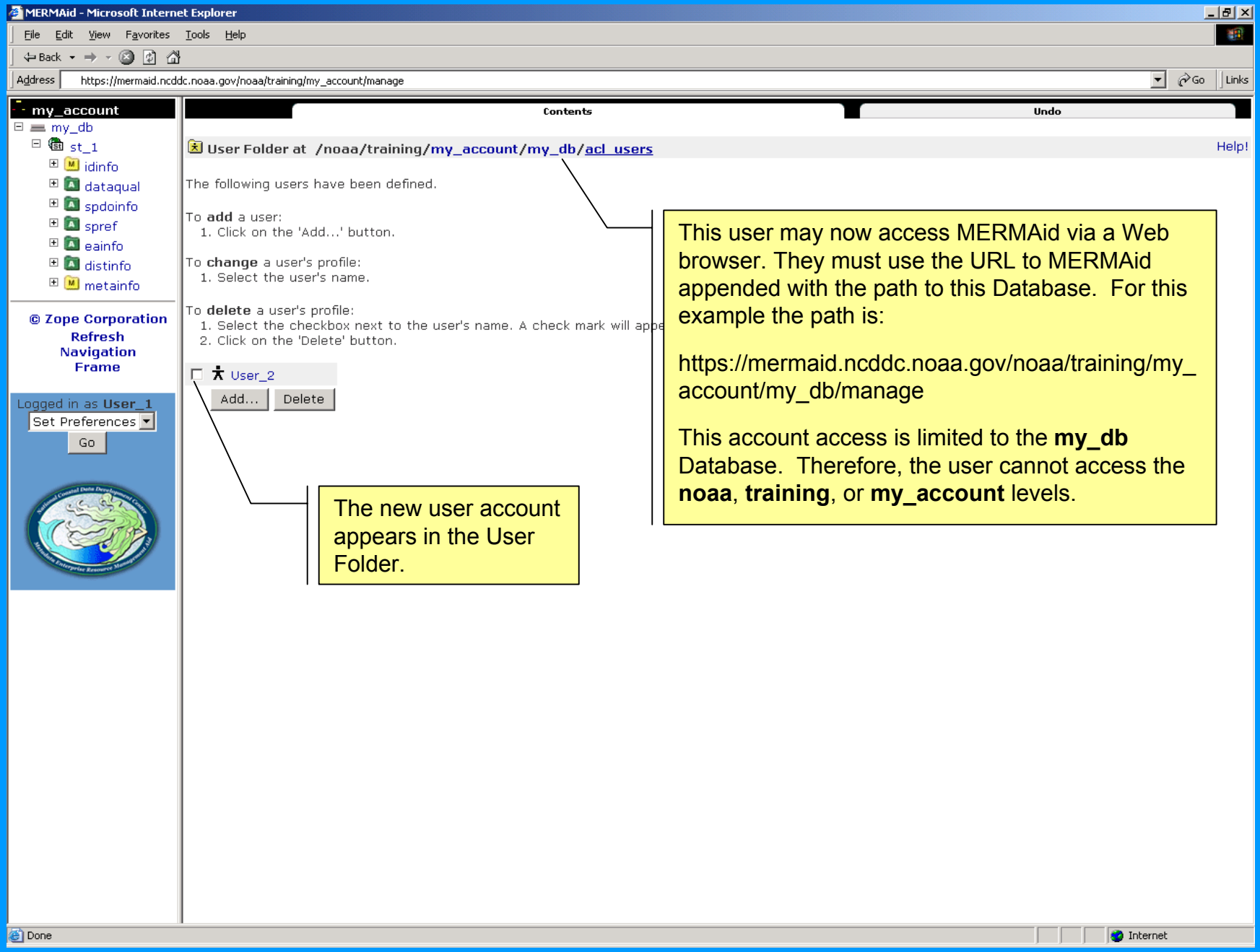
The “Email Address” must be completed with a valid email address.

The contents of the “Password” and “(Confirm)” text boxes must match.

The “Domains” text box should be left empty unless the account needs to be restricted to one or more User domains.

The “Roles” selection box lists three roles, “Custodian,”” Manager,” and “Restricted.” Assign a “Role” to the user by clicking on its name.

User Account Established



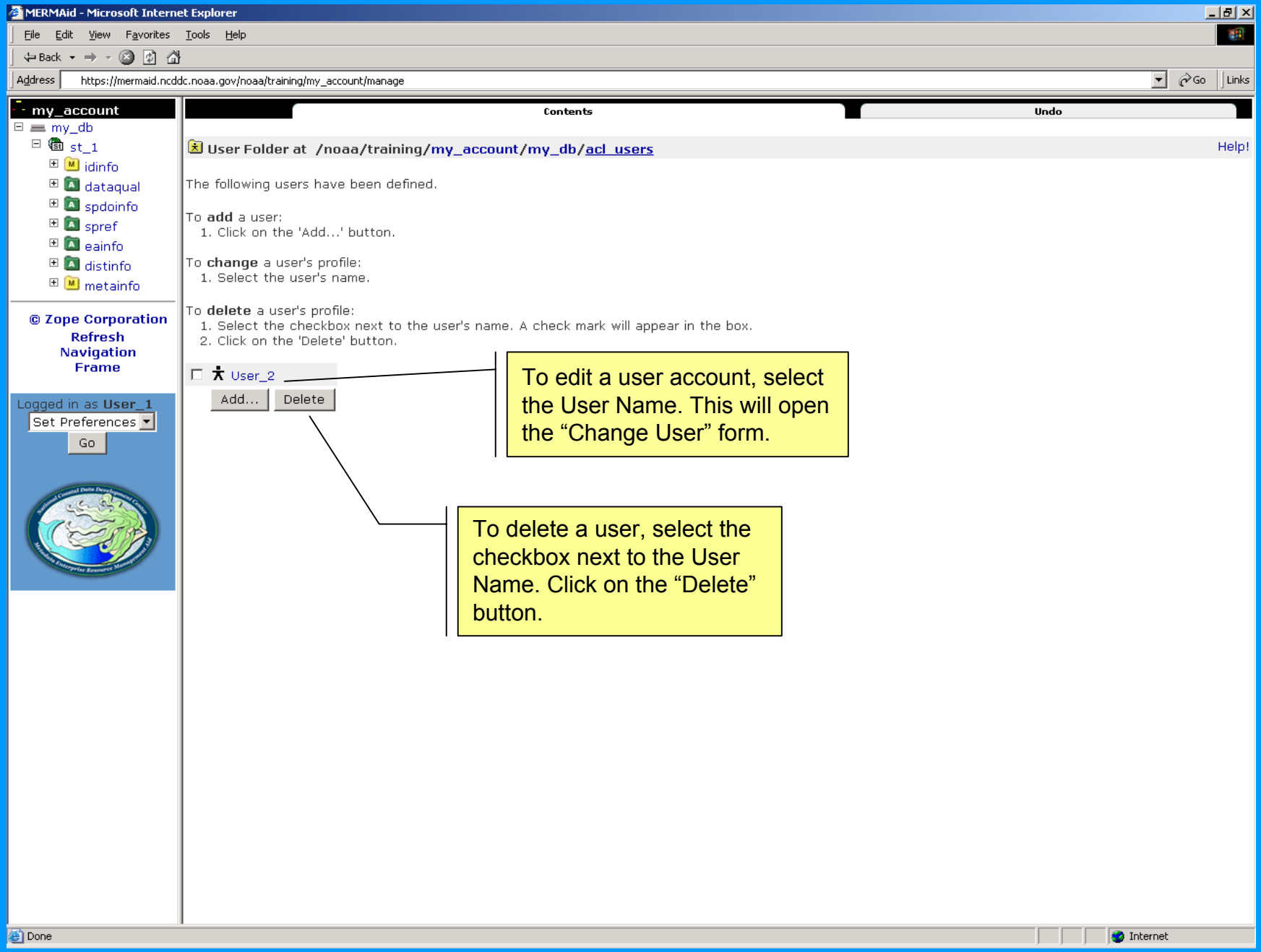
This user may now access MERMAid via a Web browser. They must use the URL to MERMAid appended with the path to this Database. For this example the path is:

https://mermaid.ncddc.noaa.gov/noaa/training/my_account/my_db/manage

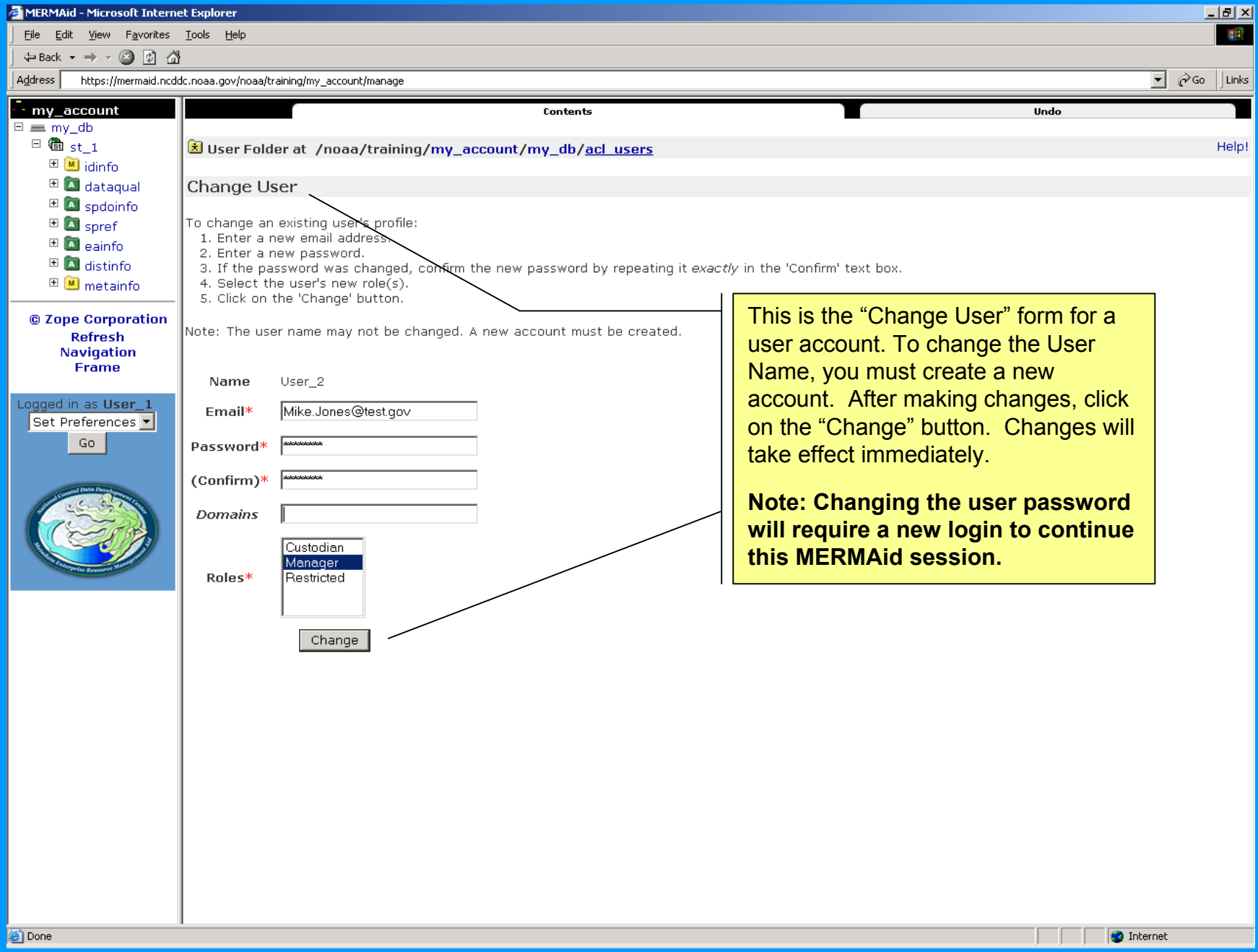
This account access is limited to the **my_db** Database. Therefore, the user cannot access the **noaa**, **training**, or **my_account** levels.

The new user account appears in the User Folder.

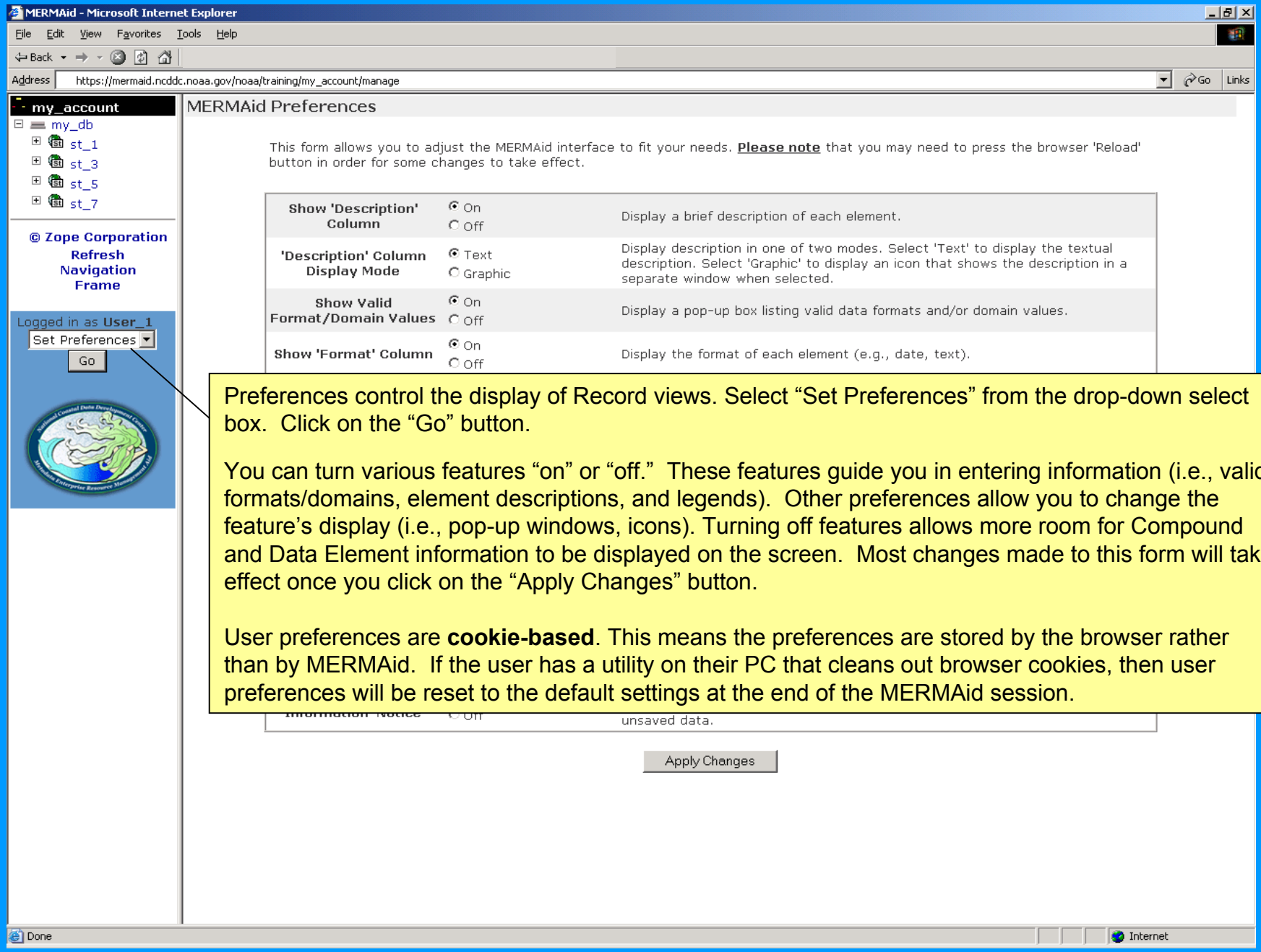
User Folder – Edit Or Delete A User



User Folder – “Change User” Form



Setting User Preferences

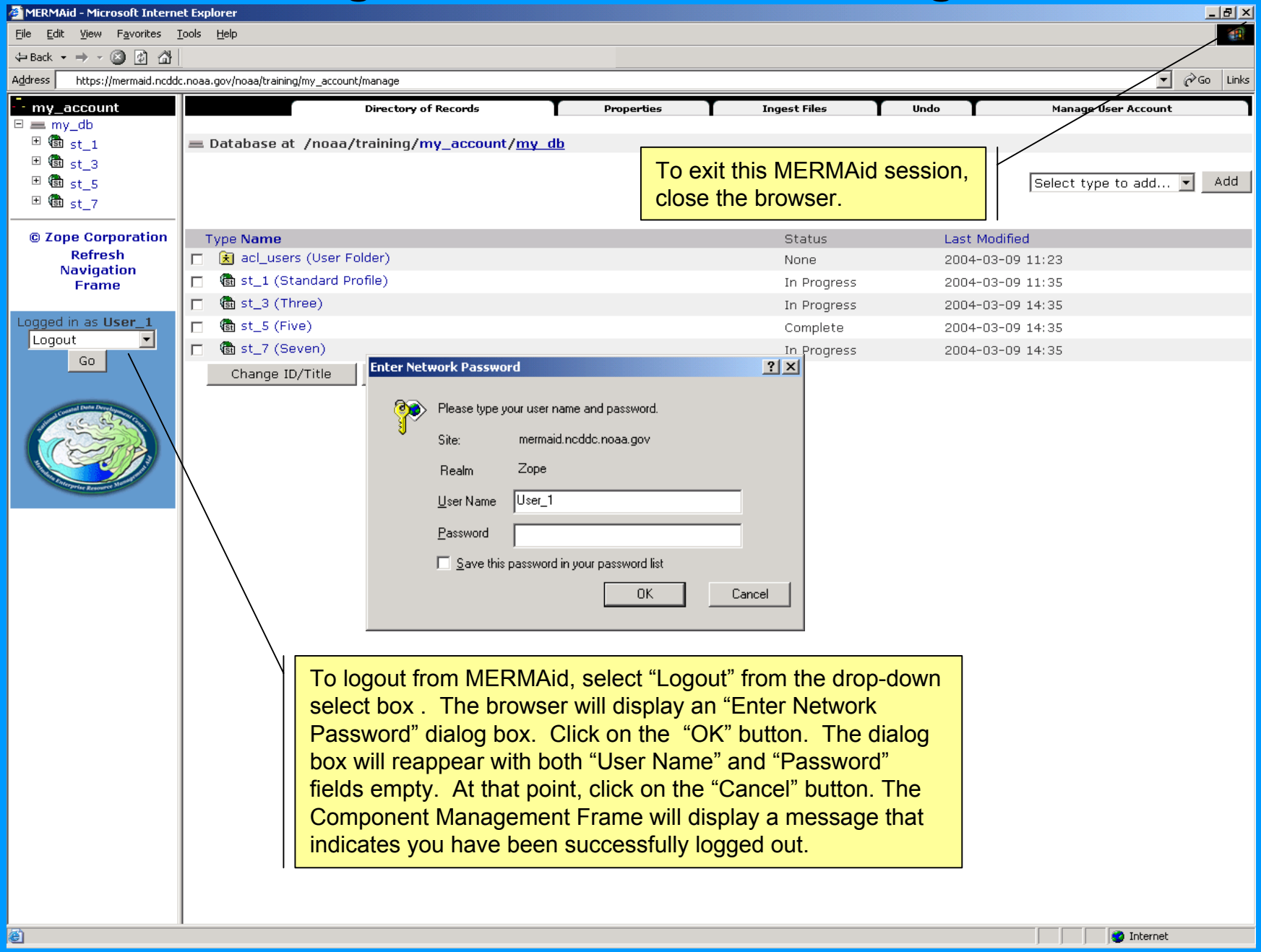


Preferences control the display of Record views. Select “Set Preferences” from the drop-down select box. Click on the “Go” button.

You can turn various features “on” or “off.” These features guide you in entering information (i.e., valid formats/domains, element descriptions, and legends). Other preferences allow you to change the feature’s display (i.e., pop-up windows, icons). Turning off features allows more room for Compound and Data Element information to be displayed on the screen. Most changes made to this form will take effect once you click on the “Apply Changes” button.

User preferences are **cookie-based**. This means the preferences are stored by the browser rather than by MERMAid. If the user has a utility on their PC that cleans out browser cookies, then user preferences will be reset to the default settings at the end of the MERMAid session.

Ending a MERMAid Session - Logout



Questions regarding MERMAid

can be directed to

ncddcmetadata@noaa.gov